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We understand that the Anaconda Copper Mining Company will not issue any report of its operations for the last fiscal year, which closed with June. Since the company was organized on its present basis, yearly reports have been issued which, while imperfect in some respects, at any rate gave a fair and tolerably full statement of the operations of the company and the results obtained. We regret very much that this policy of publication has been abandoned and that of secrecy adopted. The change is doubtless due to the control of the company by the Amalgamated Copper Company, the parties who are prominent in the management of that concern having always withheld information of their operations from the public as far as possible. We need hardly repeat here what we have often said, that this policy is not justifiable from any point of view, and that investors who choose to put their money into a "blind pool" deserve all the losses which they may incur.

The general interest manifested in mining investments is having an effect in the South as well as the West. More interest is being taken in the gold mines of Georgia, for instance, and more promising work is being done there than for a long time past. The Dahlonega District, in which work has been more extensive and continuous than anywhere else in the South, is soon to have railroad communication, which will be of great advantage to the mines. Last year a consolidation was effected by purchase of a number of the small mines in the district, and the new company is introducing more systematic methods of mining and development than have been heretofore known in the district. It is also putting up a mill of fair size, and a chlorination plant, and proposes to test the value of its properties thoroughly.

It is encouraging to see that the boom methods which were tried by some Georgia mine-owners and some English promoters two years ago —with very unsatisfactory results—have been dropped. The latest developments are being made in a more business-like way, and with correspondingly better prospects of success.

The accounts from the new gold mining district at Cape Nome on the Alaskan coast are still very contradictory, and must be accepted with caution—as indeed all reports from the Puget Sound ports which trade with the North have to be. It is certain, however, that a considerable amount of gold has been brought down from the region this season; though the exact amount cannot be stated with any approach to accuracy. The workings are in placer or alluvial deposits entirely, and are in the immediate neighborhood of the sea coast; some of them being actually on the shore. A considerable number of miners are in the district, many of whom have either been in the Klondike Region or turned aside after starting for the Yukon. The district has at least the advantage that it is accessible by water and can be reached all the year round; though, of course, work cannot be carried on all the year. On the sea coast, however, the winter climate is far less severe than on the Yukon, and if there is much gold in the district it can be worked to better advantage than the Klondike. The close of the season will probably bring us more definite information.

The traffic of the Great Lakes, as we have heretofore noted, is showing an extraordinary increase this year. Although there was a loss in the Lake Superior traffic in September, owing to a blockade of eight days in the Sault Canal caused by the sinking of a large vessel, the total tonnage of freight carried through the Sault Ste. Marie Canal this year from the opening of navigation up to October 1st, reached the great figure of 17,684,153 short tons. This is an increase of 2,052,298 tons over the heavy business of 1898, and of 4,094,970 tons over 1897. The great importance of this waterway to the iron trade is shown by the fact that the iron ore carried from the Lake Superior mines formed 62.7 per cent. of this freight, the total this year so far being 11,095,316 tons. This figure points to a total shipment from the Lake Superior ports of at least 15,000,000 tons for the year. Coal was the next item of freight in importance, the total having been 2,767,621 tons, or 15.7 per cent. of the entire freight. The coal movement has been somewhat variable this year, for while the shipments of anthracite show a gain of 112,633 tons, or 32 per cent. over last year, there was a decrease of 348,131 tons, or 13.7 per cent., in bituminous coal. The chief reason for this falling off is that when navigation opened in 1898 there was almost a coal famine in the Lake Region, requiring extraordinary shipments, and during the whole season there was a sharp competition among the coal operators in Ohio, Pennsylvania and West Virginia for the Lake business. This has not existed during the present season, the home demand requiring a much larger amount, so that there is very little surplus seeking a market.

Under present conditions it is natural that there should be an increase in Lake tonnage, and we find that the American Shipbuilding Company—in which are consolidated the chief Lake shipbuilding plants—has on its books at the present time orders for no less than 21 large

cargo steamers, which will be able to handle during next season a total of probably 2,000,000 to 2,500,000 tons of freight. Other additions will be made, and there is no doubt that the Lake fleet of 1900 will be equal to almost any probable demand upon its capacity.

## THE SUPPLY OF GOLD.

A great deal has been said and written recently—and not always with knowledge—about short supplies of gold and embarrassment to trade likely to arise from the war between Great Britain and the South African Republic. A brief statement of the facts will, we think, be sufficient to dispel any serious apprehension of trouble from this cause; and to show that the anticipated scarcity exists only in imagination.

We have heretofore, both in the "Engineering and Mining Journal" and "The Mineral Industry," shown that a large share of the world's gold output is yearly absorbed in the arts; another share goes into the war reserves, which the chief European nations—Russia, France, Germany and Austria—have thought it necessary to accumulate in recent years; leaving only a moderate percentage of the total to be added to the general stock of money. In view of the great business activity which has existed all over the civilized world for two years past, and in view also of the heavy government expenditures for war material, there is no doubt that the proportion of gold which has gone into commercial use—either into actual circulation as coin or into bank reserves, which are a basis for paper money issues—has been greater than for a long time past. Even allowing for this, however, the quantity thus utilized is very far from the total current production, which so many writers assume enters at once into trade.

But even if we should admit the truth of this assumption for purposes of argument, we do not find any cause for apprehension. The total production of gold in the world in 1898, as given in "The Mineral Industry," Volume VII., was $289,147,779. Of this the Transvaal and Rhodesia, the districts where production is stopped by the war, furnished $78,091,842. If this amount should be deducted, it would cause a considerable falling off for the time. But we find that up to the end of August this year the South African output was $63,003,556, or only $15,088,286 less than the total for the whole of last year. The September output was fully $8,000,000 more, a large part of which must have been exported before hostilities began. We may, however, disregard this, as the amount has not been officially reported, and assume that the South African production for 1899 will be approximately $15,000,000 below that of 1898.

Now we recently ("Engineering and Mining Journal," September 2d, 1899, page 272,) showed that the production of gold is this year larger all over the world than it was last year. The increase elsewhere is certainly equal to, if not greater than, the $15,000,000 shortage in South Africa, and the total for 1899 will be somewhat greater than even the extraordinary amount of 1898.

Of course a little embarrassment may be felt by the Bank of England to which much of the South African gold goes directly or indirectly, and which is at present called upon to provide for heavy government payments for war supplies. It is to meet these conditions that the Bank has raised its discount rate from 3½ to 5 per cent., though that was rather a precautionary measure than one of absolute necessity. Affairs will quickly adjust themselves, and no trouble need be feared on this account.

How long the trouble in South Africa and the consequent suspension of gold production there will continue, it is very difficult to foresee; but even if the war should be a long and destructive one, there is no danger of any scarcity in gold supply. There will be gold enough for all the needs of trade, and in fact, a greater amount than has ever been available before.

## THE SITUATION IN THE JOPLIN ZINC REGION.

The situation in the Joplin zinc mining region shows little change from that recently noted. The smelters have not at all relaxed their efforts to break down the combination of the miners, and talk freely of their determination to shut down their furnaces altogether rather than agree to the present scale of prices. On the other hand, the Missouri & Kansas Zinc Miners' Association maintains the fairness of its scale, and refuses to make any change. The great body of the ore producers seems determined to support the Association and its policy of stopping mining operations until the smelters withdraw from their position. The exceptions are found in the new companies which have sold or are selling stock in the East, and are obliged to keep at work, because a cessation of output, and consequently of dividends, would cause reductions in the selling prices of their stocks, which they cannot now afford. The situation is to be regretted, especially as it now seems probable that the deadlock may last for some time; and it will leave hard feelings between the two parties, whose interests are really not so different as they seem. It is to be hoped that a compromise may be arranged and that both parties may be willing to yield a little to secure an agreement.

We have usually had occasion to commend the management of the Missouri & Kansas Association, and it has been certainly a benefit to the miners of the region. A return to the old conditions when the small producers were practically at the mercy of the ore-buyers, would be unfortunate. The conservative action of the Association has been of great advantage to the miners, and their general adhesion to it shows that they appreciate this fact. It is, moreover, by no means altogether a disadvantage to the smelters to have an association to deal with which can fix an intelligible and uniform basis of prices, and by securing fair returns do much to ensure a full and regular supply of ores.

The smelters should bear this in mind and be willing to abate their present bitter and somewhat unreasonable hostility to any combination of the miners. On the other hand, there are considerations which ought to induce the Missouri & Kansas Association to give up something on its side, and we are of the opinion that it would be the part of wisdom to concede something on its scale of prices. Too high prices for spelter are not favorable to the permanent interests of the producers. To enlarge the output is not a very difficult matter, and to put it up to a point where an overstocked market and falling prices are inevitable is quite possible. It is to their best interests to increase the use of the metal and find new applications for it; and to do this a moderate range of prices is required. High quotations may soon check the expansion of the trade.

Moreover, very high prices and reports of large profits must stimulate the search for zinc ore deposits and their development. Not long ago our news columns showed the resumption of active work at the Tennessee mines, which have long been idle. New explorations have lately been undertaken in New Jersey and Virginia. Elsewhere we refer to promising discoveries of zinc ores in Western Ontario. It is evident that a largely increased supply of ores can be had, if the inducements are sufficient.

We hope that both parties will consider the situation carefully and thoroughly and will, as we have suggested, make such concessions as may secure an agreement which will be to the advantage of all.

## THE READING REPORT.

The Philadelphia & Reading Company passed about two years ago through the latest of its periodical reorganizations. It has now been operated for somewhat over a year and a half by the new management, which has had the advantages of strong financial backing, freedom from pressing liabilities and a general co-operation and common interest in the anthracite coal trade, which have not existed before in many years. Nevertheless the report of the operations of the Coal and Iron Company, covering the fiscal year ending June 30th, 1899, which has just been made public, is not a very encouraging one. An abstract of it will be found on another page.

Like the reports issued by all the large anthracite mining and carrying companies, there is in this document a regrettable absence of detail. The statements of operations are included incidentally in the general report of the Reading Company, and give only general statements of receipts and payments, without any of the particulars which would interest the mining world. We are left to make our own deductions from rather meagre data and very brief explanations. There are, however, certain facts which seem to call for comment.

The Philadelphia & Reading Coal and Iron Company has certain advantages which ought to give it a prominent—if not a predominant—position in the trade. The company owns a great estate; it mines from its own lands over 8,000,000 tons of coal, and with the additional tonnage bought from individual operators, who are either its tenants or otherwise dependent upon it, it controls about one-fifth of the total output of anthracite coal; a larger proportion than any other company. The line to tidewater owned by the Reading Company—of which the Coal and Iron Company is a branch—is the shortest and most direct, in some respects the best placed, of any of the anthracite coal roads. Its estate was originally acquired at an average of about $500 per acre, which is a reasonable or even a low price.

Taking the financial statements of the report, we find that on a business which furnished gross receipts for the year amounting to $23,643,838, the net earnings were only $423,039, the expenses having absorbed no less than 98.2 per cent. of the earnings; and even this meagre return was a marked improvement over the previous year, when the expenses exceeded the receipts by $53,525. The total investment in the company's property is given in the balance sheet at $89,239,536; so that the net earnings last year were only 0.47 per cent. on the investment. This is certainly an inadequate return, especially in a year when the anthracite trade was generally in good condition, de-

mand being fully up to the average and prices better maintained than for years. Perhaps it would be fair to add to this result the profit made by the Railroad Company on the carriage of the coal mined by the Coal and Iron Company, but there is no way of ascertaining that amount from the report; and it is not probable that even this would bring the returns up to anything like a fair business profit. Moreover, it is to be noted that the expenses include no allowance for depreciation of coal property or plant, and only a very small sum for the new work which is always required to keep collieries up to a working standard.

As to production, we find that the Coal and Iron Company handled last year 9,379,025 long tons, of which it mined 8,183,644 tons from its own collieries, and purchased 1,195,381 tons from tenants and other individual operators. The quantity of coal sold was 8,303,344 tons. This leaves a balance of 1,075,681 tons, and it is not stated whether this includes the coal used at the mines, or represents in any part additions to stocks. The difference is 11.5 per cent. of the quantity mined and purchased. The average selling prices are not stated. The only way in which we can approximate the return is to divide the total receipts by the tons sold, and this gives an average of $2.85 per ton. The cost of mining coal is given in the report at $1.589 per ton mined and bought—a decrease of 19.7 cents from the preceding year—but we are not told what items of expense are included in this estimate. If we divide the total expenses by the tons of coal mined and purchased, we obtain an average of $2.48 a ton.

What is perhaps the most discouraging statement is not found directly in the report of the Coal and Iron Company's operations, but incidentally in the traffic returns of the Railroad Company. From this we ascertain that there was carried last year on the railroad a total of 10,199,531 tons of anthracite, including the coal controlled by the company and that furnished by other operators on the line; and 4,687,814 tons of bituminous coal, chiefly received from connecting roads and delivered to points on the company's lines. Now if we carry back the comparison for 10 years, we find that the anthracite tonnage of 1899, as compared with that of 1889 shows an increase of 16 per cent. This alone would give an average growth of 1.6 per cent. a year; but all the increase was made in the first five years of this period, and as compared with 1894 there was an actual decrease last year of 4.1 per cent. On the other hand, the bituminous coal tonnage shows an increase in 10 years of no less than 276.8 per cent. This means that the anthracite trade has been and is practically stationary. In the active and growing industrial regions served by the Reading Railroad, the normal growth of the demand for fuel for the mills and factories has been met by the cheaper bituminous coal hauled some hundreds of miles, and not by the anthracite which is mined almost at their doors.

The future of the Reading—and of the other anthracite companies—is, as we have more than once pointed out, in a radical change of methods. The conversion of the coal mined into gas or electricity at the mines or at the great centers of consumption and its transmission to consuming points in one—or perhaps, both—of these forms is entirely feasible and would put the trade on a new and profitable footing, securing it a profitable future by increasing the consumption of anthracite, and it would still allow the coal roads to have the profit on carrying the coal to the centers of consumption.

## NEW PUBLICATIONS.

"Locomotive Data." Philadelphia; published by Burnham, Williams & Company (the Baldwin Locomotive Works). Pages, 100; with diagrams.

This is a very convenient little pocket-book containing a number of tables and diagrams relating to speed, hauling capacity, boiler pressure and other particulars of locomotives. It has figures also relating to grade and curve resistances and similar engineering data. It gives in a condensed and convenient form many of the facts relative to a locomotive which are needed for reference. A number of blank pages for memoranda are bound in the covers.

"Tables of Squares: Containing the True Square of Every Foot and Fraction Thereof, from 0 to 100 Feet." By John L. Hall. New York; The "Engineering News" Publishing Company. Pages, 100. Price, $2.

Engineers, draftsmen and others who have calculations to make involving surfaces and cross sections, understand the necessity of such tables as these if time and labor are to be econimized. This book is of pocket-book size, and gives the squares of each foot and fraction from 0 to 100 ft., advancing by 1/16 in. The squares are given in decimals of a foot, these decimals being carried out to six places. Assuming the correctness of the calculations, which there is no reason to doubt, this collection seems to us to present several advantages over others in use. No other tables we have seen are correct beyond the second or third decimal place. Hall's tables are correct to the sixth place. As to extent, these tables give the squares from 0 to 100 ft. A convenient point is that the page numbers in this book agree with the number of feet to be squared—all the squares pertaining to any foot being open before the use at the same time. A separate column is devoted to each inch, broken by blanks into quarters, the roots being set in heavy type, thus securing the utmost ease of reference and clearness. The size of the page is such that any square desired is found without fatiguing the eye, and the type is clear and of a good size, avoiding the crowding too often seen in tables; both points to be commended.

"Metrical Tables." By Sir Guilford L. Molesworth. London; E. & F. N. Spon, Limited, and New York; Spon & Chamberlain. Pages, 88. Price, 80 cents.

This volume contains in pocket-book form a very full set of tables for the conversion of British measures and weights to their metric equivalents. Besides the ordinary measures of length, surface and capacity, it gives many of the combinations used in engineering work, such as the conversion of foot-pounds into kilogram-meters, pounds per square inch into kilograms per square centimeter, and the like. There are also heat tables comparing the British thermal unit with the metric calorie; as well as a list of electric measures. A useful page gives the metrical contractions agreed upon by the Paris conference of 1881; such as kg. = kilogram, km. = kilometer, hl. = hectoliter, and so on. This table deserves some study, as it establishes standards for these abbreviations, about which there is evidently some difference of opinion among writers and printers, especially in this country.

"Gold Dredging in Otago, New Zealand." Otago, N. Z.; published by the "Daily Times." Pages, 100; with map and illustrations. Price (in New York), 50 cents.

This is a reprint of a series of sketches originally published in the Otago "Daily Times," giving something of the history of river dredging for gold in that district, with statements of the results secured by the operators there. New Zealand is famous for its gold dredges, and the Otago District is the special home of this industry. The articles are, as might be expected, written in a popular way, and are hardly of scientific value; but they give many interesting particulars, and show to what an extent this method of mining has been carried in the Colony. The points which are chiefly to be noted are the low cost at which the work has been carried on, the small capital invested in individual enterprises, and the profits which have been earned on very moderate returns. The dredges have, in the aggregate, made a very considerable addition to the gold output of New Zealand, and many are still in successful operation there.

"Die Grubenbrandgewaltigung." Von Robert Lamprecht. Leipzig, Germany; Arthur Felix. Pages, 144; with 7 lithographed plates.

Bergingenieur Robert Lamprecht, at present manager of the great coal mines at Kladno, in Bohemia, is well known as an authority on coal mining practice, and has written several works which are regarded as standard authorities in Europe. In the present volume he has collected and presented descriptions of methods for extinguishing underground fires, for preventing fires in mines, and for saving life in case of fires. His work is based on some 20 years' practical experience in various coal mines, and was undertaken because very little has been written or published in permanent form upon this subject. It is not an easy matter—as anyone who has had experience will admit—to handle an underground fire, and a publication of this kind is necessarily of value to mine engineers and managers.

The book is divided into seven sections, the first treating of the origin of underground fires, the second of preventive measures, and the third of indications of the presence or breaking out of a fire. The fourth describes appliances for enabling miners to enter galleries or other places full of irrespirable gases. The fifth is devoted to various appliances and methods for dealing with underground fires. The sixth treats of rescue stations for preserving life. The seventh and last refers to fires in stock coal heaps (spontaneous combustion) and in coal cargoes.

The work is an excellent contribution to coal mining literature, and is, we believe, the only one specially devoted to this subject. With regard to the illustrations, the publishers have followed the very bad practice—far too common in French and German books—of grouping them all in a few large plates inserted at the end of the book, instead of distributing through the text, where they belong and can readily be referred to in connection with the description. This blemish is very much to be regretted, since it detracts seriously from the value of the illustrations, and thus injures what is really a good and valuable book.

## BOOKS RECEIVED.

In sending books for notice, will publishers, for their own sake and for that of book buyers, give the retail price? These notices do not supersede review on another page of the Journal.

"Bidrag Till Sveriges Officiela Statistik, Bergshandteringen Kommerskollegü Underdaniga Beratteke for ar 1898." Stockholm, Sweden; Government Printer. Pages, 44.

"A Preliminary Report on a Part of the Clays of Georgia." Bulletin No. 6A of the Geological Survey of Georgia. By George E. Ladd. Atlanta, Ga.; State Printer. Pages, 204; illustrated.

"A Hand-book on Gold Milling." Second Edition, 1899. By Henry Louis. London; Macmillan & Company, Limited, and New York; the Macmillan Company. Pages, 592; illustrated.

"Tariffs of Foreign Countries: Part I. Europe." Volume XVI., Special Consular Reports. Prepared and issued by the United States Department of State. Washington; Government Printing Office. Pages, 776.

"A Primer of Forestry. Part I: The Forest." By Gifford Pinchot. Being Bulletin No. 24 of the Division of Forestry, Department of Agriculture. Washington; Government Printing Office. Pages, 88; illustrated.

"Notes on the Forest Conditions of Porto Rico." By Robert T. Hill. Being Bulletin No. 25 of the Division of Forestry, Department of Agriculture. Washington; Government Printing Office. Pages, 48; illustrated.

Geological Survey of Canada. "Report on the Geology and Natural Resources of the Nepissing and Temiscaming Areas." By Alfred Ernest Barlow. Ottawa, Canada; Dominion Printers. Pages, 302; with maps and illustrations.

## CORRESPONDENCE.

We invite correspondence upon matters of interest to the industries of mining and etallurgy. Communications should invariably be accompanied with the name and ddress of the writer. Initials will only be published when so requested.
Letter should be addressed to the MANAGING EDITOR.
We do not hold ourselves responsible for the opinions expressed by correspondents

### Over-Capitalizing Mining Companies.

Sir: In your issue of September 30th you give a few words explaining your warning to intending investors in regard to over-capitalized mines; and you also refer to the fact that objection has been made to the course that you have pursued, that it is said you are unfriendly to the mining interests, etc. Well, I hope that you will go right on exposing these schemes. The greatest trouble to-day in getting a legitimate mining enterprise before the public is the fact that the West is so full of fakes—the directorate often containing the names of apparently reputable men, whose names, however, are sometimes used without their knowledge, or consent to use them is gained by misrepresentation—that investors are afraid to take hold of any at all. For instance, a series of claims worth about $200,000 will be capitalized for $2,000,000. Stock will be sold on a prospect, because it is near some famous mine.

Good propositions are not hurt by such criticisms, and the poor ones are made to hunt their holes. So keep on in the good work.

J. G. Allen.

Los Angeles, Cal., Oct. 7, 1899.

### Zinc Ore in Western Ontario.

Sir: I would like to call your attention to an interesting fact which has been but little noticed, and that is the existence of zinc ore of excellent grade in Western Ontario. The principal mine so far located is the Zenith Zinc Mine, a short distance north of Rossport, on the line of the Canadian Pacific Railway, on the north shore of Lake Superior. In addition to this, five 40-acre claims showing good zinc ore have been recently located not far from the Pioneer discovery. The Zenith Mine was discovered about 30 years ago and was referred to in the first report of the Ontario Bureau of Mines. It was never worked until last year, when it was purchased for $20,000, as a prospect by Mr. H. J. Beemer of Ottawa and some other parties interested in zinc mining in Belgium. They purchased the property, put 5 men to work on it and produced over 1,200 tons of ore in 3 months. The ore was hauled on sleighs 12 miles to the Canadian Pacific Railway and was shipped to Belgium. The ore is almost pure, only about 5 per cent. of it requiring concentration. The deposit is in lode form. It occurs in bornblende and schist and the vein dips to the northeast at an angle of 90°. Talc is found on the walls. The other property, the Hillsdale, is similar in occurrence, but about 2 miles nearer the railway. It occurs on the side of a steep hill, the lode crossing the formation, and showing an iron capping from 6 to 20 ft. wide. Good samples of ore were taken from about 1½ ft. below the surface, where shots were put in.

Canadians are quite willing to put their money into gold mines, but so far it has been very difficult to interest capital in copper or zinc. We believe that the expenditure of $10,000 would put these claims on a shipping basis and make them capable of producing at least 50 tons of clean zinc ore daily.

J. R. Currie.

Toronto, Ont., Oct. 9, 1899.

## MAGNESITE BRICKS.

Written for the Engineering and Mining Journal.

The manufacture of magnesite brick for furnace linings and other places where it is necessary to provide material which will resist intense heat, has been, until recently, unknown in this country. All the magnesite bricks used have been imported, chiefly from Germany. At the present time, however, this manufacture has been successfully undertaken by the Fayette Manufacturing Company in its works at Layton, on the banks of the Youghiogheny, in Fayette County, Pa. The company has there a very large plant where both ordinary and refractory brick are manufactured. There is also a large plant under the same ownership near Johnstown, Pa. Experiments with magnesite were begun some time ago at Layton and were continued until success was finally attained. The value of magnesite as a refractory material has long been known, although its use has been somewhat limited on account of the cost and some difficulties which existed in the way of bringing it into the proper forms. The demand, however, for the material for the lining of furnaces and converters has increased very largely in recent years chiefly from the steel makers, and the Fayette Company decided to undertake the work. So far, the processes used have been kept a secret and access to the works is not permitted.

A portion of the material used is obtained in the vicinity of Layton, but the greater part is imported from Germany and Greece. Magnesite is mined in this country only in California and the production there is used entirely on the Pacific Coast. It is understood that so far some difficulty has been found, owing to the fact that nearly 50 per cent. of the brick made and put in the kiln become distorted or otherwise injured or broken in burning and handling. Some of these can be sold as second grade brick, but the greater part have to be broken and ground up to be used over again in the manufacture.

So far, the Layton plant has been unable to keep up with the orders received for magnesite bricks and furnace linings, notwithstanding the high prices charged. It is stated also that with experience the work is constantly improving, the quality of the product being better and the proportion of spoiled bricks less with each successive kiln burned.

The headquarters of the Fayette Company are in Pittsburg, J. G. Wainwright being President, W. A. Stanton Treasurer, and Frank Williams Secretary.

LAKE SUPERIOR FREIGHT TRAFFIC.—The official statement of freight passing through the Sault Ste. Marie Canal shows that the total this year from the opening of navigation up to October 1st was 17,684,153 net tons, 14,461,986 tons being eastbound and 3,222,167 tons westbound freight. The total compares with 15,631,855 tons last year, and 13,589,183 tons in 1897. The mineral freights included in this total were, in net tons:

| | 1897. | 1898. | 1899. |
|---|---|---|---|
| Iron ore | 8,589,702 | 9,434,493 | 11,095,316 |
| Pig iron and manufactured iron | 90,854 | 192,407 | 147,895 |
| Copper | 93,098 | 87,938 | 80,613 |
| Anthracite coal | 362,171 | 352,668 | 565,301 |
| Bituminous coal | 1,145,822 | 2,550,452 | 2,202,321 |

There was also included in freight this year 21,034 tons building stone and 242,837 barrels salt.

ARSENIC MAKING AT DELORO, ONTARIO.—The new plant of the Canadian Goldfields, Limited, at Deloro, Ont., lately started refining arsenic. The plant is situated in the old original mill, which is a very large building, and which contained the machinery for the purpose used some years ago. However, a great deal of remodeling had to be done and many improvements added. It consists of several furnaces, a large number of closed chambers, engine, packing room, store room, bath room, etc. The concentrates are run through elevators until they are brought into a large slowly revolving furnace, which drives off the sulphur and arsenic in vapors. These pass through large brick chambers and the arsenic gradually condenses and drops. These chambers are then emptied and the contents passed through another similar cylinder and series of chambers. It is then dried and packed for shipping. From both series of furnaces, roasting cylinders and chambers large flues which join in the form of a Y run to a high smokestack. No arsenic escapes, so that there will be no danger to surrounding fields. The plant is under the supervision of Mr. Seldon, a man of wide experience at the business in England. The finished product is sold in New York, where there is a good demand for it. Manager Kirkegaard has obtained good results from treating the tailings from the old mill and from the mill that was burned in 1898. When colder weather comes on this work will be discontinued until spring.

PETROLEUM IN THE MANUFACTURE OF SHEET IRON.—Since the year 1897 petroleum residuals have been used as fuel in the Nytvinsk Factory of the Kamsk Company in Russia, in the manufacturing of sheet iron. The chief difficulty to be contended with in this manufacture is that of obtaining an even temperature over the rolls. With the introduction of petroleum furnaces this lack of uniformity has apparently been overcome and the heat is evenly distributed over the whole plate, while air is admitted in the right proportions so that oxidation of the iron is prevented. The construction of the furnace used differs very little from the usual gas furnace. At the back of the furnace arch is an opening which admits an oil sprayer. This sprayer is so arranged that it can be moved in any direction, while there is no possibility of air entering except through the sprayer. The products of combustion travel through the side flues and thence to the chimney. Each furnace has its own chimney. As a rule the chimney is short, as with petroleum fuel less draft is required, and the fire can be so regulated that practically no smoke is observable. At the back of the furnace an opening is made to regulate the temperature and to increase or decrease the supply of fuel and air. As a rule, the petroleum furnace is heated very rapidly—that is, it is ready for working in from 2½ to 3 hours, and not more than from 4 to 5 cwt. of petroleum are required for every three blooms dealt with.

NEW LAKE STEAMERS.—The Carnegie Steel Company has just placed a contract with the American Shipbuilding Company for five large steamers for carrying iron ore from Lake Superior ports. With this contract, says the Cleveland "Marine Review," the American Ship-Building Company now has on its books, for delivery running into July and August of next year, orders for 21 vessels, the value of which at present prices is about $5,280,000. This does not include a steamer building at Detroit that will be finished about the close of navigation. Of the 21 vessels to come out next year, all but one are freight carriers, and only 4 are tow-barges. All the others are steamers. Three of them are of the Welland Canal size kind, capable of carrying about 3,000 tons. The others are of the 6,000 to 8,000-ton class. These freighters will move in a single trip about 130,200 gross tons and in a full season a little more than 3,000,000 gross tons. The five Carnegie steamers, just ordered, will each be 475 ft. over all, 50 ft. beam, 29 ft. depth and of about 7,200 gross tons capacity. They will have quadruple-expansion engines (cylinders of 20½; 38½; 45 and 63 in. diameter, with 40 in. stroke) and three Scotch boilers each, the diameter of which will be 13½ ft. and the length 12 ft., furnishing steam at 200 lbs. pressure. It is understood that the two Welland Canal size steamers, which have just been ordered by Mr. A. B. Wolvin of Duluth, are very probably for a company of Cleveland and Buffalo vessel-owners who are planning for elevators and other terminal facilities at Montreal, in order to develop a large business through the enlarged St. Lawrence canals. These vessels will be duplicates of the steamer "Huron"—252 ft. over all, 238 ft. keel, 42 ft. beam and 26 ft. hold, with triple engines of 18½, 31½ and 51 in. by 36 in. stroke.

## EDWARD ORTON.

Written for the Engineering and Mining Journal by E. O. Hovey.

The death of Edward Orton removes one of the foremost of American geologists, and leaves but two or three of the older disciples of the present school of geology still living. Suave and kindly in disposition and manner, his co-workers of equal age will feel their ranks sadly depleted by his demise, while the younger geologists throughout the country will feel that they have lost a friend and well-wisher. Prof. Orton was born in Delaware County, New York, March 9th, 1829, and was graduated from Hamilton College in 1848. He then studied theology for a time at Lane Seminary in Cincinnati, but his tendency toward the natural sciences led him to go to the Lawrence Scientific School, Harvard University, though he returned to theology again, for in 1854 we find him a student at Andover. In 1856, however, he became professor of natural science in the State Normal School, at Albany, N. Y., where he remained three years. Then he became principal of the academy at Chester, N. Y., resigning in 1865 to take the professorship of natural science in Antioch College, Ohio, which he held until 1873, adding the presidency thereto in 1872. When the Ohio State University was founded in 1873, Dr. Orton was chosen to be its first president and professor of geology. Ill health compelled him to resign the presidency of the institution in 1883, but he retained the chair of geology until his death.

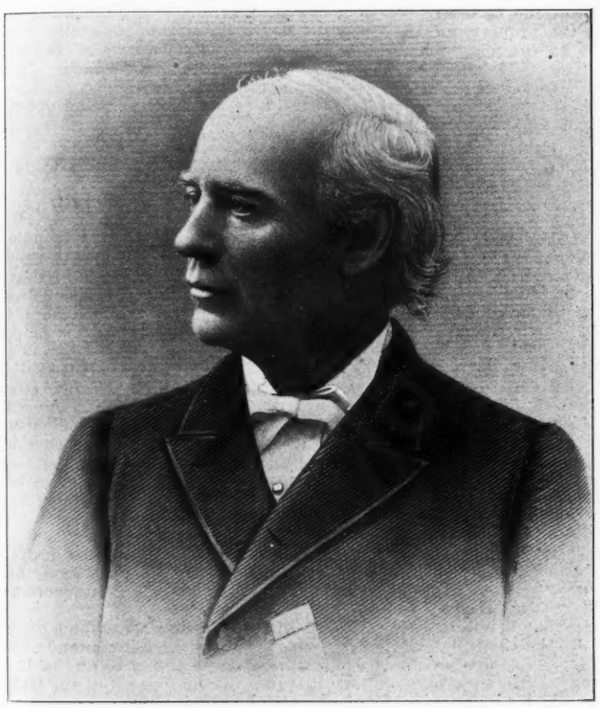
Prof. Orton's particular interest in geology seems to date from a time soon after he went to Antioch College, for he was appointed assistant on the State Geological Survey of Ohio under Newberry in 1869, though his first geological paper was not published until the following year. Associated with him as assistants on this first Ohio Survey were other men who have since become noted as geologists. He devoted his attention wholly to the inorganic and economic side of his science and published many valuable contributions to knowledge regarding coal, petroleum, gas, clay and building stones, a bibliography of his geological articles including about 70 titles. He confined his writings almost wholly to Ohio subjects, and was the highest authority on the economic geology of that State. He was an occasional contributer to the columns of the "Engineering and Mining Journal," and wrote the article on "Clay Industry of Ohio" in Volume II. of "The Mineral Industry."

In 1883 he was made chief of the survey, a position which he held until his death. Under his administration an immense amount of valuable work was done, from an economic as well as a scientific standpoint, for he kept the survey closely in touch with the development of all the mineral resources of the State. Careful in his own observations, he always insisted on a high grade of work on the part of his assistants. He was conservative in his statements and fearless in his promulgation of what he considered to be the truth. These latter characteristics sometimes gained him the denunciation of the citizens of his State, as was the case with his discussion of the natural gas fields of Ohio. He was the strong advocate of the theory that the "rock pressure" of the gas was due to hydrostatic pressure and contended as early as 1887 that the methods of consumption then practiced were extremely wasteful and would lead to speedy exhaustion of the supply. In 1889 he emphasized this warning and predicted that the Findlay wells would not last 10 years, at the rate the gas was then being burned. For this statement he was severely criticised at home, but subsequent events have proved him to be correct, and showed that the advice of the State geologist would have saved millions of dollars to the State, if it had been followed.

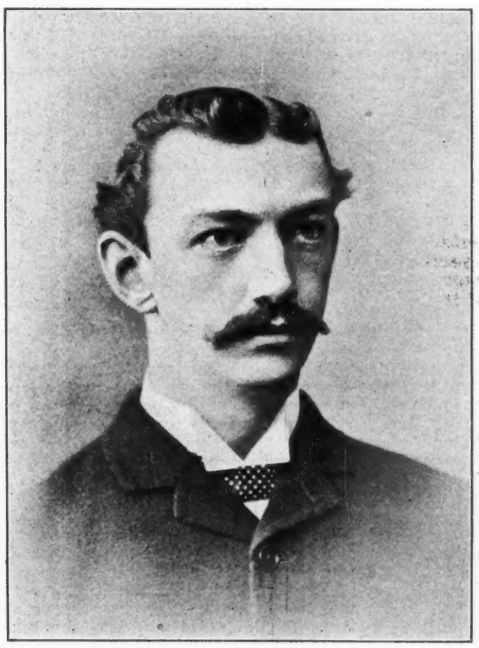
Prof. Orton received the honorary degree of Doctor of Philosophy from Hamilton College in 1875, and that of Doctor of Laws from Ohio State University in 1881. He was a member of several scientific societies. Joining the American Association for the Advancement of Science in 1870, he was made a fellow in 1875 and was always a strong supporter of the organization and active in its councils. He was chairman of the section of geology and geography in 1885, and chose as the subject of his vice-presidential address, "Problems in the Study of Coal, with a Sketch of Recent Progress in Geology." He was president of the association for the current year, the meeting being held in Columbus, Ohio, last August. More important to the history of geology in this country was his connection with the Geological Society of America, of which he was one of the founders and the contributor of several valuable articles to its "Bulletin." He was the president of the society in 1897.

The sphere of influence of Prof. Orton was not confined to geology, however, for he was widely known as a lecturer and an educator, his position as president of the State University giving him especial prominence in the latter line for many years.

A number of years ago he suffered a partial stroke of paralysis, from which he recovered sufficiently to continue his work with greater activity than many unhampered younger men can show. He seems to have had a premonition that his end was near, for five days before his death Prof. Orton wrote to the secretary of the University that he felt that he had lived beyond his allotted time and that he ought to be permitted to rest. He did not meet his classes again and died of heart trouble on Monday afternoon, October 16th, a man greatly beloved by his associates and students, and, indeed, by all others who came in contact with him.



EDWARD ORTON.



HAMILTON YOUNG CASTNER.

## HAMILTON YOUNG CASTNER.

Hamilton Young Castner, the well-known chemist and inventor, died September 10th at Saranac Lake, N. Y., where he had been spending the summer in the hope of benefitting his health, which had been failing for some time past. He had been, we believe, unable to spend much time in active work for over a year past. His death at the early age of 40 years is very much to be regretted; considering what he had accomplished in a comparatively short space of time, much more might have been expected from the work of his mature years, aided by the knowledge and experience which he had already acquired.

Mr. Castner was born in Brooklyn, N. Y., in 1859. After completing a special course in chemistry at the Columbia College School of Mines under Prof. Chandler, he started business in New York as an analytical chemist. He soon became well known in the profession and earned a reputation for careful and reliable work. Later he was associated with Messrs. J. H. & H. Booth, but in 1884 he retired from this business in order to give his whole time to experimental work on aluminum. In 1886 he perfected his sodium process, which, after a time, entirely superseded the older experimental processes. In that year he went to England, where his process at once attracted very favorable notice. With Sir Henry Roscoe and others he formed the Aluminum Company, Limited, of which he was appointed managing director. The erection of works at Oldbury, near Birmingham, was begun at once, and some $300,000 was spent on the plant. The works, which were completed in 1887, had a capacity of 700 lbs. of aluminum daily, to manufacture which required also the daily production of a ton of sodium and 3 tons of double chloride, the raw materials required being 8 tons of caustic soda and 30 tons of hydrochloric acid. From these figures some

idea may be obtained of the magnitude of the works. Many distinct processes were employed, and were all brought by Mr. Castner to such a state of perfection that the metal produced was of 99.5 per cent. purity. Before the Deville-Castner Process was started in 1887, the very small quantity of aluminum produced was sold for $15 a pound; but the Aluminum Company placed its metal on the market at $5. Failing to find the anticipated demand at this price, it was lowered to $4 in 1888, and later to $3 a pound, even the last named price being nearly ten times as great as the metal now commands. About the end of 1888 an unlooked for competition arose from the electrolytic process, and though the Deville-Castner process held its own for a time, and really produced a purer metal, the price fell rapidly to $1 a pound. At this figure the sodium process could no longer compete, notwithstanding many improvements made by Mr. Castner, the latest being his electrolytic process for producing sodium, which he patented in 1889. Turning then from aluminum, he gave his entire attention to the development of the production of sodium and its application. When it ceased to be required in making aluminum its consumption fell almost to nothing; but so successfully did Mr. Castner work in this direction that in a short time he created a business second only in importance to the aluminum industry. This business has been entirely under the control of his company, which owns the various patents. From almost nothing in 1890, the production of sodium grew in a few years to about 300 tons yearly. Peroxide of sodium, which is now used extensively for bleaching silk, straw and other goods, was first placed on the market in 1891; although previously known to chemists, it then became for the first time a commercial product, as its manufacture had never before been conducted outside the laboratory in small quantities until Mr. Castner took out his patents.

Later, Mr. Castner turned his attention to the electrolysis of salt for the production of caustic soda and bleach. He succeeded in solving some of the problems which had here hitherto puzzled chemists and in finally perfecting the Castner-Kellner alkali process, which is now so widely known and used.

Mr. Castner's intense application to work finally broke down his health, and for some time past he has spent considerable time in traveling in the hopes of regaining his strength. The event has shown, unfortunately, that this was in vain. Comparatively short as his life was, he has left a record of accomplishment such as few men can boast. It is to his labors that the extraordinary progress made by the chemical industry within the past 15 years is, in very considerable part, due, and he deserves the highest credit for his energy and persistence in following out lines of original investigation.

## DEVELOPING ONTARIO CORUNDUM DEPOSITS.

Written for the Engineering and Mining Journal.

The very extensive deposits of corundum which have been found in Hastings and Renfrew counties of Eastern Ontario have recently been made the subject of a somewhat unusual arrangement between the Government of that province and private capitalists represented by Mr. J. N. Shenstone, secretary of the well-known Massey-Harris Manufacturing Company, the largest makers of agricultural machinery in Canada, and Mr. B. A. C. Craig of Toronto. The mineral was discovered, or rather its identity proclaimed—for its existence, though not its nature, were already known—in 1896 by Mr. W. F. Ferrier, then of the Geological Survey, Ottawa, now of British Columbia, and as the find was made by an officer of the Crown on Crown lands, an opportunity was presented, not often afforded, of placing the deposits in the hands of parties possessed of the means required to develop them without obliging them to purchase the rights of discoverers or speculators, probably at high figures. In 1897, 1898 and 1899 the Bureau of Mines has had exploring parties in the field under the direction of Prof. W. G. Miller of the Kingston School of Mining, who has extended the limits of the corundum belt far beyond the original place of discovery in the township of Carlow. As now defined, the range of corundum-bearing rock extends for about 75 miles in an east and west direction, curving to the southwest, the width varying from 1½ to 3 miles. The lands embraced in the concession cover about 1,200 acres, in the townships of Dungannon, Monteagle, Carlow, Raglan and Brudenel. Besides the deposits on Government lands the syndicate has acquired some valuble bodies of ore on private lands in Raglan.

The syndicate receives a lease of the lands in question under the provisions of the Mines Act and of the special regulations made by order in council, the rental being $1 per acre for the first year and 20 or 25 cents per acre (according to distance from a railway) subsequently. The lease is for 10 years and may be renewed at the end of the term at the same rental for another period of 10 years, and thereafter for terms of 20 years on conditions to be agreed on. The concession also covers two water powers on the York branch of the Madawaska River, from which the syndicate proposes to develop power to use in its operations.

The agreement binds the syndicate to erect a manufactory and plant for the crushing and treating of corundum rock, having a capacity of not less than 100 tons of rock per day, and to spend not less than $100,000 within three years in developing the corundum deposits and installing machinery and plant for treatment of the mineral and manufacture of abrasive goods and other articles for which it may prove to be suited. Not less than $25,000 is to be spent in putting up the factory and plant. Experiments are to be undertaken for the purpose of discovering, if possible, a practicable method for the production of aluminum from corundum or nepheline, the gangue rock in which a considerable proportion of the mineral is found. Corundum also occurs in felspar, but the nepheline matrix appears to have a beneficial effect on its quality, as when found in this comparatively rare rock the mineral is very tough and shows a less decided inclination to split along the cleavage planes—an important feature for abrasive goods, as presenting fewer smooth and level surfaces which detract from the cutting properties of the material.

The only important use of corundum hitherto has been for polishing and cutting metals and metallic objects, but if it is found feasible to deoxidize it and use it as an ore of aluminum, a very large field of usefulness is at once open to it. Corundum has already been employed for this purpose, but two objections have been brought against it; its excessive cost and the difficulty of driving off the oxygen. A minor difficulty is the presence of magnetite and perhaps other oxides of iron which are objectionable in present modes of manufacture. Tests made under directions of the Bureau of Mines have demonstrated the excellent qualities of Ontario corundum in competition with corundum from North Carolina and carborundum, especially on hard iron and steel. Experiments made by Prof. Miller in the production of aluminate of soda from the nepheline rock are said to have proven successful in the laboratory, while aluminate of potash and soluble glass are also believed to be potential products from the same substance. Nepheline is considered, too, a suitable material for the manufacture of delft and crockeryware, excelling felspar for this purpose. Other uses to which it may be put are the making of burr stones and phonograph points. It is believed also that corundum may economically replace rubies or garnets as jewels in watch movements.

The gem varieties of corundum, known as Oriental sapphires and rubies, are found, in Burma, in the limestone, and as the geological conditions in Ontario are very similar, search has been made for gems here. Crystals have been found of ultramarine shade, almost, if not quite, up to the gem quality, and it is possible that true gems may yet be found in abundance.

A striking feature of the Ontario corundum deposits is their great size and extent. The rock contains in many places as high as 25 or 30 per cent. corundum, and one body alone is estimated to contain several million tons of the mineral. Much of the land within the corundum belt remains the property of the Crown, and the Government retains the power to fix the maximum price at which corundum, either in its raw or manufactured state, may be sold in the Dominion of Canada. The agreement therefore in no way constitutes a monopoly of the corundum business. The syndicate is taking out a charter of incorporation under the title of The Canada Corundum Company.

## RECENT DECISIONS AFFECTING THE MINING INDUSTRY.

Specially Reported to the Engineering and Mining Journal.

PUBLIC POLICY LIMITS PLACER CLAIMS.—It is contrary to public policy and to the provisions of the Revised Statutes of the United States (Sections 2330, 2331), to permit one person to cover more than 20 acres of placer ground by one location, by the device of using the names of his employees or friends as locators.—Durant vs. Corbin (94 Federal Reporter, 382); Circuit Court of the United States.

WHAT CONSTITUTES EXCLUSIVE CONTRACT FOR FURNISHING TIMBERS.—An agreement between a mine-owner and the operator of a saw-mill that the latter shall cut and saw all the timber required by the former for certain purposes, and that, if he fails to furnish as much as is required, the mine-owner shall have the right to procure it from others, and charge the cost to the mill-owner, gives the latter the exclusive right to supply the mine-owner with all the timbers required by him for such purposes.—Tutwiler vs. McCarty (25 Southern Reporter, 828); Supreme Court of Alabama.

ASSAY OF LEAD-BEARING ORES IMPORTED.—Under the provisions of paragraph 181 of the tariff act of 1897, the process of assaying lead-bearing ores should be by what is known as the "commercial method" or "fire process," and not by the "wet process."

The merchandise in question consists of lead-bearing ores which were assayed by the electrolytic or wet process. The appellants contend that the fire assay should have been adopted, and they claim a refund of the difference in duties which would result from the employment of the last-named method. Paragraph 181 of the act of 1897 provides:

"On the arrival of the ores at such establishments they shall be sampled according to commercial methods under the supervision of Government officers, who shall be stationed at such establishments, and who shall submit the samples thus obtained to a Government assayer, designated by the Secretary of the Treasury, who shall make a proper assay of the sample, and report the result to the proper customs officers, and the import entries shall be liquidated thereon. . . . And the Secretary of the Treasury is authorized to make all necessary regulations to enforce the provisions of this paragraph."

In Treasury decision 19,370, and other regulations of the Secretary of the Treasury, he prescribed that the assay of lead-bearing ores should be by the wet process. In G. A. 1992 the Board held upon the evidence of well-qualified experts at the port of New York that the commercial assay of copper ore was the fire assay, but the same class of testimony was unanimous to the effect that the usual commercial method of estimating the amount of lead in lead-bearing ores was by the wet process. It was accordingly held in G. A. 2767, and in similar cases for the present importers, that "the common, commercial, and correct test for lead is by the wet process." An appeal was taken by the importers, however, to the circuit court for the District of Washington, which reversed the decision of the board. The court said in conclusion: "In this case the evidence is all one way (additional testimony taken before the court), and it is in all respects satisfactory and convincing. From it I find that the commercial method for ascertaining the quantity of lead contained in imported ores is the fire process, and any other method of assaying does not meet the requirements of the law."

The Government acquiesced in this decision, and in Treasury decision 21,602 the Department advises that its instructions dated May 21st, 1898, in regard to the assay of imported lead ores are modified so as to require the dry or fire assay to be applied in lieu of the wet assay heretofore resorted to. Following the decision of the court, the claim is sustained that the dutiable quantity of lead is to be determined by fire assay, and the collector is instructed to reliquidate the entries accordingly on the basis of that method."—In the appeal of the Puget Sound Reduction Company from decision of collector of customs at Port Townsend, Wash.; United States Board of General Appraisers.

## THE GOLD DEPOSITS OF NEVADA COUNTY, CALIFORNIA.

Written for the Engineering and Mining Journal by G. P. Grimsley.

Nevada County, the leading gold mining county in California, is located about 100 miles northeast of San Francisco, in the Sierras. The county is 75 miles long and from 25 to 75 miles wide. In this district, until a few years ago, the largest hydraulic mines in the world were located, but laws and regulations for the protection of the farmers in the lower valleys of the Sacramento and Yuba rivers have checked this branch of mining. The deposits of auriferous gravels, often 200 ft. deep, mark the ancient river channels, but is for the time out of reach on account of the defects of the old methods. Some of this is now recovered in drift mines where from 2 to 5 ft. of the gravel near the bed rock is taken and washed, paying from $2 to $13 per ton. In many of the old workings, however, the pipes are rusting, the water running to waste and the old monitors stand idle.

Notwithstanding this set-back, the county still holds its first rank in the State. Old quartz mining properties abandoned because they were thought to be exhausted have been reopened and new levels driven, resulting, in a number of cases, in finding new and rich leads. Massachusetts Hill, famous in the past history of the district, has again come into prominence through new prospecting. In this valley the first quartz mining in the State started, and the first California stamp mill, constructed of tree trunks, capped with iron, crushed Grass Valley ores. It is estimated that the quartz mines have yielded about $105,000,000 in gold, while the county, since 1850, has produced $220,000,000 in gold.

In order to secure a permanent water supply for the various mines several companies have constructed in the mountains a series of artificial lakes, and leading from these 800 miles of canals, at a cost of millions of dollars. In 1892 the Electric Power Company was incorporated for the purpose of supplying light to the towns and light and power to the mines. Water is carried a distance of 3½ miles, with a fall of 195 ft., and this drives a series of Tutthill water wheels furnishing 2,200 H.-P. The present power available through the consolidation of several flumes is not far from 20,000 H.-P.

The mining districts are reached by the Nevada County Narrow Gauge Railroad, which branches from the Central Pacific at Colfax.

There are two centers in the district at the present time, Nevada City and Grass Valley, six miles apart. In the former the rocks are diabase, granite and slate. The larger veins are near the contact of the granite and slate, and vary from 2 to 6 ft. in width, though important mines are wholly in the granite, where the veins run from 6 in. to 3 ft. The ores are pyrite, chalcopyrite, galena with gold, the higher grades running as high as $300 and the lower from $8 to $40 per ton. The leading mines are the Providence, the Champion, the Mountaineer, the Pittsburg, the Nevada City, the Franklin, the Morning Star and the Phoenix, and are from 1,000 to 1,800 ft. deep. Other claims and mines which have been idle for some years are being reopened and new equipment added.

In the Grass Valley District the first discovery of gold was in 1850, within the present limits of the town, and later a short distance away on Massachusetts Hill. The veins average about 2 ft., and 4-in. veins have been worked with profit. The rocks are similar to those of the Nevada City District, with the addition of serpentine and diorite. The gold ore is associated with pyrite, chalcopyrite and zinc, in quartz, and a considerable amount of free gold is obtained. The average value is not far from $30 a ton. Among the leading mines are the Gold Hill, the North Star, the Empire and the Omaha Consolidated. The Empire is one of the oldest and best equipped mines of the district, and with its stone and iron buildings and the high ornamental stone wall around the property, makes a marked impression upon the visitor. Here the rock is crushed by a 40-ton Gates crusher, one of the largest constructed. Just below are 40 stamps, and below these 16 concentrators. The floors in the mill are constructed of asphalt and concrete, and the tables are marble, so that the whole structure and arrangement has the appearance of permanence. The underground workings are down to the 2,500-ft. level and the drifts are miles in length. Water power is used here as well as at the mines of the Nevada City District.

During my recent visit to this region there was marked activity in the Omaha Consolidated property, which includes the Omaha, Lone Jack and Homeward Bound mines. The Lone Jack was opened in 1856 and was closed in 1870, when the incline had reached 600 ft. Up to that time it had yielded $500,000. In 1885 the mine was reopened and the incline pushed to the 17th level, when the ore shoot was found to extend into the Homeward Bound property, which was then purchased. The works have been idle for a few years, but were started on the day of my visit, and development is now being extended. The three mines are now connected, and I made the trip underground through them. There appear to be three distinct shoots which will average $25 per ton, while the total yield to date is about $2,000,000. The pumping and hoisting machinery is capable of working to a depth of 2,500 ft. A mill of 18 stamps has been erected and another of 28 stamps.

View of Champion Mine, Nevada County, California.

A remarkable device in the Grass Valley District is the enormous air compressor installed at the North Star Mine on Massachusetts Hill. Here a 30-ft. Pelton wheel is driven by a water pressure of 335 lbs. to the square inch, controlled by a nozzle regulated by an automatic governor. The wheel is constructed of steel, with bronze cups, and makes 65 revolutions per minute. A duplex air compressor is attached directly to the axis of this wheel, with the low-pressure cylinders 30 in. in diameter and high-pressure cylinders 18 in. The air, under 90 lbs. pressure, is conveyed 800 ft. to a Corliss pneumatic hoisting engine of 100 H.-P., and to a 75-H.-P. compound pump. The air is also conveyed to the drills in the mine. The output of the compressor is 300 H.-P., and electric arrangements have been completed for operating the compressor, if necessary, so that the change can be made in a very short time.

Like many other mining districts in California, Nevada County has not only wealth below the surface, but the surface soil, aided by irrigation, is especially adapted to the cultivation of the vine and the raising of cereals. The district holds high rank in agriculture and horticulture.

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NEW RAILROAD CONSTRUCTION THIS YEAR.—According to the Chicago "Railway Age" there have been 2,700 miles of new railroad built this year up to the end of September. Fully one-half of this track was laid in the third quarter of the year. The new construction for the year will probably reach 4,000 miles, which will be the largest total for any year since 1892. The total would be greater but for the difficulty of securing delivery of rails, and the high prices.

## CRUDE PETROLEUM AND ITS PRODUCTS AS FUEL.

Written for the Engineering and Mining Journal by H. Tweddle.

(Continued from Page 460.)

The simplest and best way of burning liquid fuel is by injecting it in the form of spray by means of a jet of steam into the furnace and allowing the right amount of air to mix with it. The number of different injectors or burners that have been devised for this purpose is legion; in fact, every man who takes up the subject of oil burning generally turns his attention to devising some new mechanical device for an injector.

The simplest device would consist of two tubes fastened together, as shown in the annexed sketch, Fig. 2. In this 1, is the oil feed pipe; 2, a cock for regulating supply of oil; 3, the steam pipe; 4, the valve for regulating supply of steam; 5, a guard around pipe preventing overflow. The lower tube is flattened out to a thin broad opening, from which the stream of air or steam issues under pressure. The upper tube allows a stream of oil to flow from the supply tank, this flow being regulated by the supply cock. The oil is conducted by the guard, 5, which prevents it flowing over the sides of the lower steampipe, and distributes it in a thin sheet over the rapidly issuing steam, with the result that the oil is rapidly carried forward in the form of a finely divided spray, which is the next thing to gas, and ignites almost as easily. By changing the shape of the issuing jet of steam different shapes may be given to the flame. If we give the steam jet a fan-shaped opening, the greater part of the oil will be delivered at the sides and we will have a wide and short flame. If, on the contrary, we desire a long, narrow flame, all that is to be done is to give the steam jet a concave opening, then most of the oil is delivered on the center of the steam jet and is propelled forward to a considerable distance.

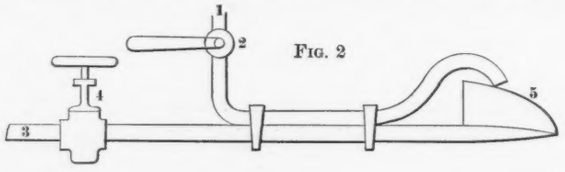


Fig. 2

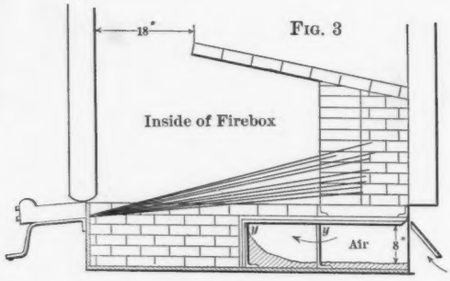


Fig. 3

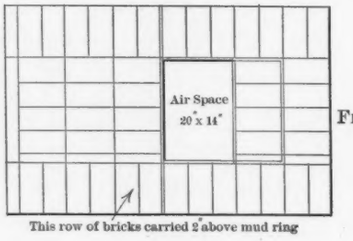


Fig. 4

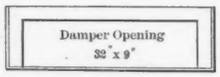


Fig. 5

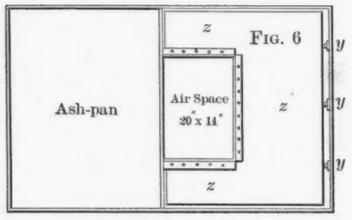


Fig. 6

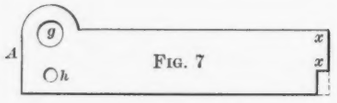


Fig. 7

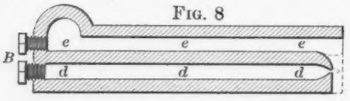


Fig. 8

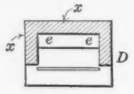


Fig. 9

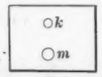


Fig. 10

The above is the simplest form of jet, which admits of wide variation according to conditions. Those who try to improve the efficiency of a fuel by altering the burner resemble a man who seeks to improve the steaming of his boiler by changing the injector. The place to work at and improve is inside the firebox or combustion chamber. The oil fuel must be so broken up or pulverized as to allow of its mixing with the air and being instantly consumed.

Supposing, for instance, that a locomotive boiler is working under a very swift draft and combustion is complete. If a shovelful of fine powdered coal is thrown into the fire box, a puff of black smoke appears immediately at the chimney. What has happened? The powdered coal was seized and carried through the tubes by the swift draft, and during the short period of its remaining in the fire box perhaps only a small portion or the outside covering of each little pellet was consumed, while the interior part was ejected unconsumed.

This is what happens to the globule of oil. If it is not consumed in the firebox, it issues either in the form of smoke or of foul smelling, unburned gases, and so much fuel is wasted.

If we take a vessel filed with benzine and set fire to it, it burns with a heavy flame and large quantities of black smoke are given off. As no air can get to the interior portion, combustion takes place on the outside, and as the contained hydrogen has a greater affinity for oxygen than carbon, it combines with most of the oxygen furnished by the air, the carbon is set free and is visible in the form of a heavy black smoke.

Fig. 2 represents such a case; here a petroleum well flowing at the rate of 100 barrels per hour caught fire, and as the air could not reach all parts of the spouting oil, the greater part was blown away unconsumed in dense volumes of smoke.

If we admit air to the interior of the volatile gases which are being given off, more oxygen is supplied and part of the carbon burns and the smoke diminishes, and if arrangements are made so as to admit sufficient air—oxygen—to all parts of the benzene and its vapor, then we will have complete combustion and no smoke will be given off. In order to do this in a practical and economical way, we must understand the chemical and physical changes which take place.

In order to obtain the greatest efficiency, from fuel oil, it should be burned in a confined combustion chamber, so as to obtain the very highest possible temperature. To do this, the combustion chamber must be of a refractory non-conducting substance which soon becomes heated to incandescence, and all gases, together with the incoming air, pass through this focus of heat.

This refractory lining is most necessary where oil fuel is used, and its advantages are applicable to coal-burning furnaces. Notwithstanding the fact that a certain amount of heating surface is covered by the brick work, experiments have shown that there is both a slight increase in evaporation and a small saving in coal in the lined firebox.

I may also add that when the oil is injected with a steam jet better results are obtained than when air is used as the pulverizing medium; and the steam injected oil seems to have a much softer flame so that it is much easier on the furnace plates. For forges, or furnaces, for heating iron or other metallurgical operations, air-injected oil is more suitable.

Exactly what chemical combinations take place in this fiery furnace is hard to say. Theoretically the carbon becomes oxidized to carbonic acid and the hydrogen to water vapor, but on several occasions when the writer was engaged in experimenting on the evaporative efficiency of fuels, not only the fuel used was weighed, but also the amount of steam evaporated was carefully freed of any water which might be carried over mechanically and was condensed and weighed, and the amount of air entering the furnace was approximately measured, and so far as possible, all factors of error were eliminated. The fuels experimented with were analyzed and their theoretical efficiency calculated. Under these conditions fairly accurate results might have been expected, but on many occasions, especially when using steam-injected oil and working under heavy forced draft, the results were surprising; in fact the evaporative efficiency obtained was greater than the theoretical efficiency. This seemed impossible, and it was supposed that an error had been made in weighing either the fuel used or the water evaporated, or else the steam had mechanically carried a considerable quantity of water in suspension from the boiler to the condenser. Moreover, there seemed to be no control to these results; sometimes they would happen, and sometimes not. But when they did happen I always noticed that for some reason the focus of heat was more incandescent than usual and that the combustion chamber was almost free from flame. In fact it was a case of flameless combustion. This led me to believe that possibly changes and combinations might take place at very high temperature with which we were unacquainted.

We know that an atom of carbon combining with an atom of oxygen to form C O liberates a certain number of units of heat, and that if this C O is oxidized still further to C O a still further number of units

of heat is liberated. This led me to ask if a still further oxidization, say C $O_3$, might not exist, and a still further amount of heat be generated. This is rather a startling theory, and I only offer it as a possible solution.

Moreover, it is possible that at these extremely high temperatures other combinations which are as yet imperfectly known may be effected. My only intention in referring to this matter is to draw attention to the fact that the higher temperature we get in the furnace the greater the economy in using liquid fuel.

In 1890 the writer introduced petroleum fuel on the Oroya Railroad in Peru, where the conditions were very severe. This railroad starts from sea level at Callao and crosses the Andes at an elevation of over 14,000 ft., with a total length of about 100 miles. On April 30th, 1890, the first regular passenger train in South America pulled by an oil-burning locomotive was hauled up to Verrugas, 5,800 ft. above sea level, arriving on schedule time. From then till September of the same year, when the new fuel was definitely approved, an engine ran regularly on the

Fig. 1.—Burning Oil Well.

Fig. 12.—Burner for Petroleum Fuel.

mountain service without a break-down. Against her was run a sister locomotive burning coal. Running for 5 months, pulling equal trains over the same track, these locomotives furnish the best competitive test of practical oil and coal burning on a railway.

Engine No. 1 ran with coal, Engine No. 15 with petroleum or fuel oil. Both engines were exactly alike in other respects, being American Rogers, Mogul type, with 47-in. drivers, 18 by 24-in. cylinders; total engine weight, 38 tons; tender, 28 tons. Regular train hauled was 5 cars, with an average weight of 18 tons each. Total weight of train was 118 tons. Eight and 10 cars were sometimes taken as far as Chosica, from where the 3 and 4 per cent. grades begin.

The grades and distances as far as Verrugas are as follows:

| Station. | Distance from Callao in Miles. | Height Above Sea Level in Feet. | Average Grade. |
|---|---|---|---|
| Callao | 0 | 0 | |
| Lima | 8½ | 448 | 1 in 100 |
| Santa Clara | 18¼ | 1,312 | 1 in 60 |
| Chosica | 33½ | 2,832 | 1 in 53 |
| San Bartoleme | 47 | 4,919 | 1 in 34 |
| Verrugas Bridge | 51¾ | 5,840 | 1 in 27 |

Among heavy grades may be mentioned: between Chosica and San Bartoleme, one grade 4.2 per cent; another 4 per cent., combined with a 274-meter radius curve; and again 3 kilometers before San Bartoleme, a grade of 3.92 per cent., combined with a 113-meter radius curve.

As to the behavior of the No. 15 on these heavy grades, the steam gauge always recorded from 135 to 140 lbs., never falling below 135 lbs. As a rule the pointer stood at 140 lbs., and although the safety valve would blow off at 142 lbs., so admirably was the fire at all times under control that it very rarely blew off. On grades up to 3 per cent. no smoke whatever showed from the funnel. On the 4 per cent. grades a slight hazy smoke would show at times. The average consumption of coal for the month was 79.30 lbs. per train mile. The average consumption of fuel oil per train mile was 38.55 lbs., or slightly less than 50 per cent. of the coal used.

The explanation of this lies in the regular feeding of fuel where a liquid is used, as compared with the irregular and wasteful coal stoking. Again, on the heavy grades the sharp, strong exhaust carries a large percentage of the smaller coal out of the funnel unconsumed.

In the tunnels the oil proves a great boon to passengers, doing away with the former choking smoke, whilst at all times windows may be kept open with no danger from sparks or red hot cinders flying in.

The arrangement for the interior of the firebox is shown in Figs. 3, 4, 5 and 6. As will be seen by these plans, no alterations are made in the firebox, while but few additions are put to the regular ash pan.

Fig. 3 shows the additions made; the back damper is completely closed, a large front damper with about 2 sq. ft. superficial opening being arranged in front. Above the supports goes the plate, z z

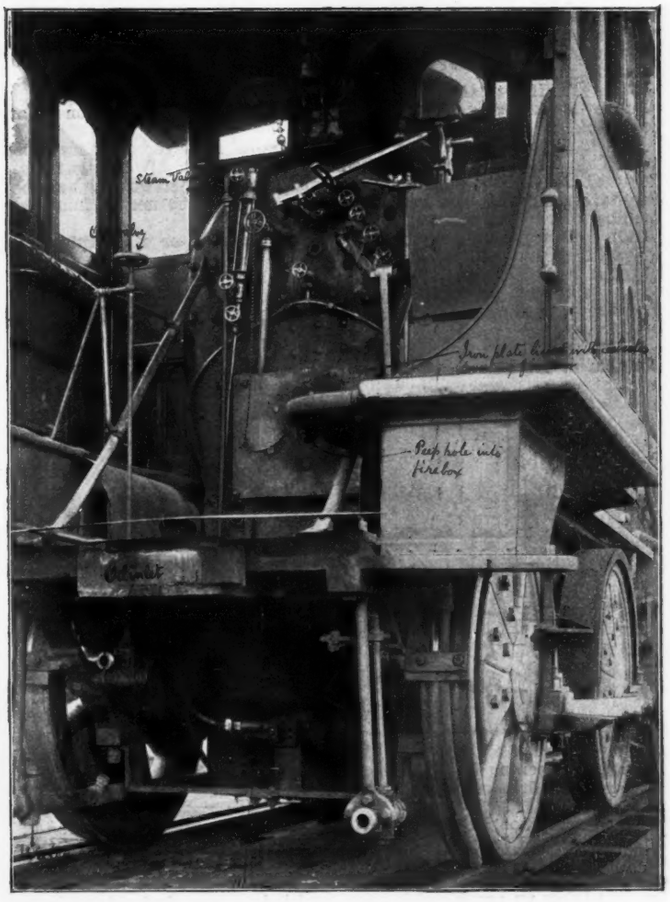



Fig. 11.—Locomotive Equipped to Burn Petroleum Fuel.

(Fig. 6), with an air opening 20 by 14 in. This plate supports the firebrick at the back of the firebox, which receives the vaporized oil. Fig. 4 shows a plan of brick arrangement. Fig. 3 shows a section through the firebox and ash pan with the burner in position.

In Fig. 7 the burner is represented. A is a general side view of burner; at g it is tapped for a 1¼-in. oil pipe and at h for a ½-in. steam pipe.

Fig. 8 represents a sectional view through center of burner; e e e is the oil passage, d d d is the steam passage, both these passages being 3 by ¾ in. Fig. 9 represents the front end of the burner. Fig. 10 represents the back end of the burner.

The oil coming through the passage, e e e, falls directly on the steam shooting through the narrow slit at the end of the passage, d d d, and is completely pulverized.

With this burner the bricks do not serve in any way for breaking up the oil, but merely as a white hot retort in which air and vaporized oil are mixed in the proper proportions.

The supply of air is regulated by the front damper, the supply of oil by a wheel valve worked by the fireman's hand in the cab. The steam is seldom touched except when an engine is laying up for any length of time at a station. With the oil and air under such easy control there is no difficulty in obtaining perfect combustion without smoke.

The holes, k and m, at the back of the burner, are closed with plugs. By unscrewing these the burner can be quickly cleaned without removing; this, however, is rarely necessary, the burner, as a rule, keeping perfectly clean for an indefinite period.

The burner is cast in one piece and finished by hand at a total cost of about $12. As this burner is of one piece it does not get out of order.

The length of the burner is entirely arbitrary. The width is made to suit the quantity of fuel to be introduced.

On the heavy grades of the Oroya line as much as 220 lbs. of coal are burned per mile, or 110 lbs. of oil. To perfectly spray such a large flow of oil a certain width of passage is necessary. The burner best adapted to such heavy work had an oil passage 3 in. wide and a steam outlet of 3¼ in. The oil aperture was 3 by ¾ in., the steam aperture 3¼ by 1/40 in.

Around the oil opening runs a sort of projecting hood which prevents any oil from leaking when rounding sharp curves. Steam from another locomotive is used in getting up steam; 100 lbs. pressure from cold water has been shown on the steam gauge in 25 minutes, but an hour is generally taken so as not to strain the boiler. If necessary wood can be used to raise steam.

No. 15, after running six months, showed no signs of leaking or straining. About 150 firebrick were used for the whole brickwork, including the arch. This brickwork will last from 6 to 8 months. Fig. 11 is from a photograph of an oil-burning engine. The firedoor was taken off and replaced by an asbestos lined plate with a 4-in. peep hole. It will be seen that the changes are very few and easy getatable.

A very ingenious way of keeping the tubes perfectly clean was soon discovered. Once or twice a day the fireman would open the peep hole and insert the end of a large tin funnel, capable of holding a bucket or so of coarse sand or sawdust. The engineer would open the throttle full and the fireman poured the sand into the funnel. The sharp, quick exhaust instantly swept the sand through the tubes, sweeping out every trace of dirt or soot.

Difference if elevation seemed to affect combustion but little and the same boiler would steam almost as freely at 14,000 ft. elevation as at sea level.

Fig. 12 is the same burner, but on a smaller scale for ordinary boilers. This form is especially suited for marine work. The oil is introduced at the top, the steam or air from the side. The two plugs at the back are removable and can be used to clean the burner without detaching it.

In ordinary stationary boilers of the locomotive or water-tube type the arrangement of firebox already described will be found very suitable, but in boilers of the Cornish, Lancashire or Marine type, where the flues are too small to admit of such an arrangement, I would advise the plan shown in Fig. 13, which has given excellent results in practice.

Here the ordinary fire-door is removed and replaced by a double iron plate, a, a, asbestos lined to prevent overheating the stoke hole. To

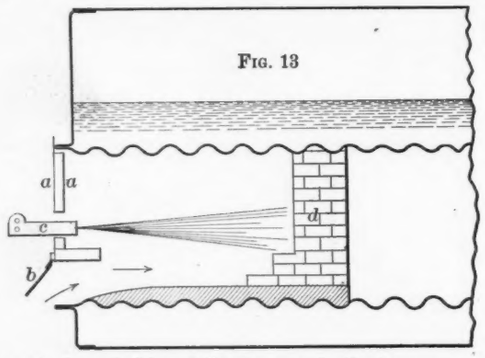


Fig. 13

the lower part of a a is hinged the damper, b, the burner, c, projecting through an opening in the center of a. Underneath is a firebrick shelf to catch any drip of oil and carry it forward and also to deflect the incoming air.

The burner shoots the steam and oil against the fire-brick column, d, built square and leaving passages on each side for the flame to follow the flue. Where the flue is of sufficient size it is better to build a circle of fire-brick right around it; this gives better results and a more even fire, but takes up considerable room, and it is always desirable to leave a passage on the side of the column, d, sufficiently large to admit of a man crawling around it without the necessity of pulling it down, should it be necessary to get to the back of the flue or combustion chamber.

Some engineers have preferred to replace the column, d, by a checker-work wall of fire-brick, thinking the gases would be more completely mixed and consumed, but I have found that the solid column and fire-brick lining can be so arranged that the incoming air is fed directly under the escaping jet of oil and steam, and a most thorough mingling of the air and combustible gases takes place, and but little extra air is required to obtain a smokeless fire.

The distance of column d from the burner will vary according to conditions—pressure of steam and quality of oil used—from 2 to 4 ft.; 30 in. is a good distance to begin with and can be varied till the best point is found.

The more fire-brick used in the furnace the more even and intense the flame and the more the roar and vibration is diminished, although it cannot be completely eliminated. This roar is one of the objections to oil fuel in large boilers and I have seen stoke holes where the roar was so great that everything was quivering, including the iron walls of the empty bunkers; but this can be greatly diminished by adjusting the furnace.

Modern practice demonstrates that we are working more and more towards the concentration of power and heat: High pressure in boilers to allow of multiple expansion of steam in high speed engines; high consumption of fuel per square foot of grate surface, means a high-pressure draft together with a large evaporative power per square foot of heating surface. This means a great saving in weight and cost of boilers. In marine practice compare for a moment the most modern high-speed torpedo boat, with its light water-tube boilers, of little water but great steaming capacity, against the average style of marine boiler, and the short stroke, high-speed, accurately balanced engine, compact, light and strong, against the cumbersome old style marine engines.

We now require increased speed and this means greatly increased power. So far as engines are concerned we have almost reached the limit of perfection, unless the ordinary style and type be completely changed, but the pinch is in the boilers, and the trouble of providing fuel for them and burning it economically in them. Here is where liquid fuel becomes unapproachable for safety, storing, ease and economy of handling, comfort, increase of steam capacity and greater radius of steaming.

(To Be Continued.)

## ABSTRACTS OF OFFICIAL REPORTS.

### Philadelphia & Reading Coal and Iron Company.

The report of this company covers the year ending June 30th, 1899. Under the last reorganization agreement, the operating concern is the Reading Company, which owns the stocks of both the Philadelphia & Reading Railroad Company and the Philadelphia & Reading Coal and Iron Company, as well as their equipment.

The anthracite coal handled by the Coal and Iron Company for two years past has been as follows, in long tons:

| | 1897-98. Tons. | Per ct. | 1898-99. Tons. | Per ct. | Changes. Tons. |
|---|---|---|---|---|---|
| Coal mined | 7,626,676 | 87.6 | 8,183,644 | 87.3 | I. 556,968 |
| Coal purchased | 1,082,403 | 12.4 | 1,195,381 | 12.7 | I. 112,978 |
| Total | 8,709,079 | 100.0 | 9,379,025 | 100.0 | I. 669,946 |
| Total coal sold | 7,706,169 | .... | 8,303,344 | .... | I. 597,175 |
| Av. receipts per ton sold | $2.97 | .... | $2.85 | .... | D. $0.12 |
| Av. expenses per ton handled | 2.64 | .... | 2.48 | .... | D. 0.16 |

The increase in tons mined was 7.3 per cent.; the increase in coal purchased was 10.5 per cent., and the increase in sales was 7.7 per cent. The average receipt per ton is obtained by dividing the gross receipts by the tons of coal sold; while the average expense is the figure obtained by dividing the total expenses—including fixed charges—by the tons mined and sold. The report says that the average cost of coal mined and purchased was $1.589 per ton last year, against $1.786 in 1897-98; a decrease of 19.7c. per ton, or 11.0 per cent. It is not stated what expenses are included in this estimate of cost of coal.

The gross earnings and expenses of the company for two years past compare as follows:

| | 1897-98. | 1898-99. | Changes. |
|---|---|---|---|
| Gross earnings | $22,909,553 | $23,643,838 | I. $734,285 |
| Operating expenses | $21,802,691 | $22,364,177 | I. $561,486 |
| New work at collieries | 630,624 | 377,926 | D. 252,698 |
| Taxes and fixed charges | 529,763 | 478,696 | D. 51,067 |
| Total expenses | $22,963,078 | $23,220,799 | I. $257,721 |
| Net, or deficit | Def. $53,525 | Net. $423,039 | I. $476,564 |
| Per cent. operating expenses to earnings | 95.2 | 94.6 | D. 0.6 |
| Per cent. new work to earnings | 2.7 | 1.6 | D. 1.1 |
| Per cent. taxes, etc., to earnings | 2.3 | 2.0 | D. 0.3 |
| Per cent. total expenses to earnings | 100.2 | 98.2 | D. 2.0 |

The report says: "All work done at the collieries, and all additions made to their structures have been charged to cost of coal. The work which has been carried on for several years with the purpose of reducing the number of separate workings and of increasing the average output of the collieries, and thus lessening the cost of each operation, has been carried so far that, whereas in June, 1893, there were 54 collieries producing a daily average of 38,160 tons, or 706 tons per colliery per day, in June, 1899, there were 41 collieries producing a daily average of 48,048 tons, or 1,172 tons per colliery per day. The decrease in the number of collieries has been caused by the closing of worked-out collieries, and of collieries of which the working was excessively costly, and by the consolidation of contiguous collieries. The collieries have still a capacity of daily production in excess of the maximum amount that they are likely to be called upon to produce, and they and all their appliances are in thoroughly good order. The development of the collieries has resulted in considerable economies of production, and the average cost of all the coal mined was less than for any year since 1879."

The balance sheet at the close of the year is of interest as showing the enormous figures to which the company's liabilities have extended. The condensed statement is as follows:

| | | |
|---|---|---|
| Capital stock | | $8,000,000 |
| Bonds and mortgages | | 7,046,147 |
| Amount due Reading Company | | 77,280,349 |
| Current accounts and balances | | 1,312,065 |
| Net profit for past year | | 423,038 |
| Total | | $94,061,599 |
| Coal and timber lands | $62,417,916 | |
| Colliery improvements, coal depots, etc | 15,885,123 | |
| Securities of controlled companies | 9,872,825 | |
| Stocks, bonds and mortgages | 63,672 | |
| Cash and accounts receivable | 5,822,063 | |
| | | 94,061,599 |

The amount due Reading Company represents the advances which the Railroad Company has made since the first organization of the Coal and Iron Company, to meet the liabilities of that concern; in other words, the losses incurred in its coal transactions. From this, however, ought to be deducted the profits on transportation, the amount of which it is impossible to ascertain.

Concerning the coal carrying business of the Philadelphia & Reading Railroad, the report gives the following comparisons, taken at intervals of five years, showing the lack of growth in the anthracite traffic and the gain in the bituminous trade. The anthracite business originates on the line of the road, which the bituminous coal is received from connecting lines. The figures are in long tons:

| | 1889. Tons. | Per ct. | 1894. Tons. | Per ct. | 1899. Tons. | Per ct. |
|---|---|---|---|---|---|---|
| Anthracite coal carried | 8,795,496 | 87.6 | 10,640,346 | 86.3 | 10,199,531 | 68.5 |
| Bituminous coal carried | 1,243,912 | 12.4 | 1,690,228 | 13.7 | 4,687,814 | 31.5 |
| Totals | 10,039,408 | 100.0 | 12,330,574 | 100.0 | 14,887,345 | 100.0 |

The anthracite business shows an increase of only 1,404,035 tons, or 16.0 per cent., as compared with 1889, and an actual decrease of 440,815 tons, or 4.1 per cent., as compared with 1894. On the other hand, the bituminous trade shows a gain in 10 years of 3,443,902 tons, or 276.8 per cent.; the greater part of this gain—2,997,586 tons—having been made during the past five years. Of this business the report says: "The consumption of anthracite is not growing rapidly because it is more costly than bituminous coal, and this cost cannot be materially lessened. Our production and transportation of anthracite must, therefore, necessarily be limited, and while it is larger than that of any other company, it cannot be expected to show more than a moderate rate of increase."

## THE WOOD STEAM STAMP.

The accompanying illustrations show the Wood steam stamp, provided with automatic feeder arrangement. Fig. 1 is a side elevation; Fig. 2 a half front elevation, and Fig. 3 a plan. The design is simple and is well shown by the drawings. The frame is mounted on the foundation separately from the mortar; the latter is designed to receive very heavy blows, so that vibration is not imparted to the frame and steam operating members. Three sides of the mortar are employed for screening purposes, and give ample exit for the pulp which flows, after its discharge, upon an apron mounted on the mortar. The engine, or cylinder, with its valve mechanism, and the upper portion of the frame, as shown, are adjustable in height to the two upright stands by blocks or shims, in order to accommodate from time to time the wear of the shoe and die. The stem, or piston rod, the piston head, boss head and shoe weigh about 550 lbs., and according to the drop, or rather the length of the direct stroke, which may be regulated at the will of the operator, the work of three 1,000-lb. gravity stamps is claimed. The diameter of the shoe is 8 in., the rod or stem 3⅛ in., and the piston head 5½ in. From 60 to 70 lbs. of steam pressure will operate the mill, which may also be operated by the use of compressed air.

The valve mechanism consists of a simple piston valve, operated by means of a tappet on the stem, engaging a bell-crank lever as the stamp stem reciprocates, alternately opening and closing the ports. The action is similar to an ordinary engine, with the travel of the valve governed to meet variable requirements.

The reciprocation is rapid and 200 blows per minute can easily be obtained. The number, however, is largely governed by the ability to keep the die thoroughly covered with material. The mill is absolutely grease proof, a feature in which all mill men are interested. The ore is fed automatically by means of the Wood ore feeder, a simply designed feeder for both dry and wet ore feeding.

The total weight of the mill is 4,000 lbs., and the machine may be so divided in weight of parts as to permit transportation to comparatively inaccessible properties.

The following is a monthly report from one of these stamps recently built for the G. E. M. Mining Company, and now at work near Cherry, in Yavapai County, Arizona. The report is for the month of September, which was the first full month's run, the mill having been set up and started early in August. The figures for the month are: Total hours run, 324; of the time lost necessary changes in cyanide tanks caused seven-eighths, one-eighth being due to insufficient water to supply the battery. The fuel used was 24 cords of wood; oil consumed, 3 gals.; shoes and dies consumed 70 lbs. The total ore crushed was 142 tons. This shows an average of 10½ tons of ore crushed in each day of 24 hours, an excellent record for a stamp of this size.

This seems to be a simple, compact machine, well adapted for its work. A number of these steam stamp mills are now in course of construction in shops of the builder, the E. P. Allis Company, Milwaukee, Wis., for the owners and distributors, H. A. Newkirk & Company, Chicago.

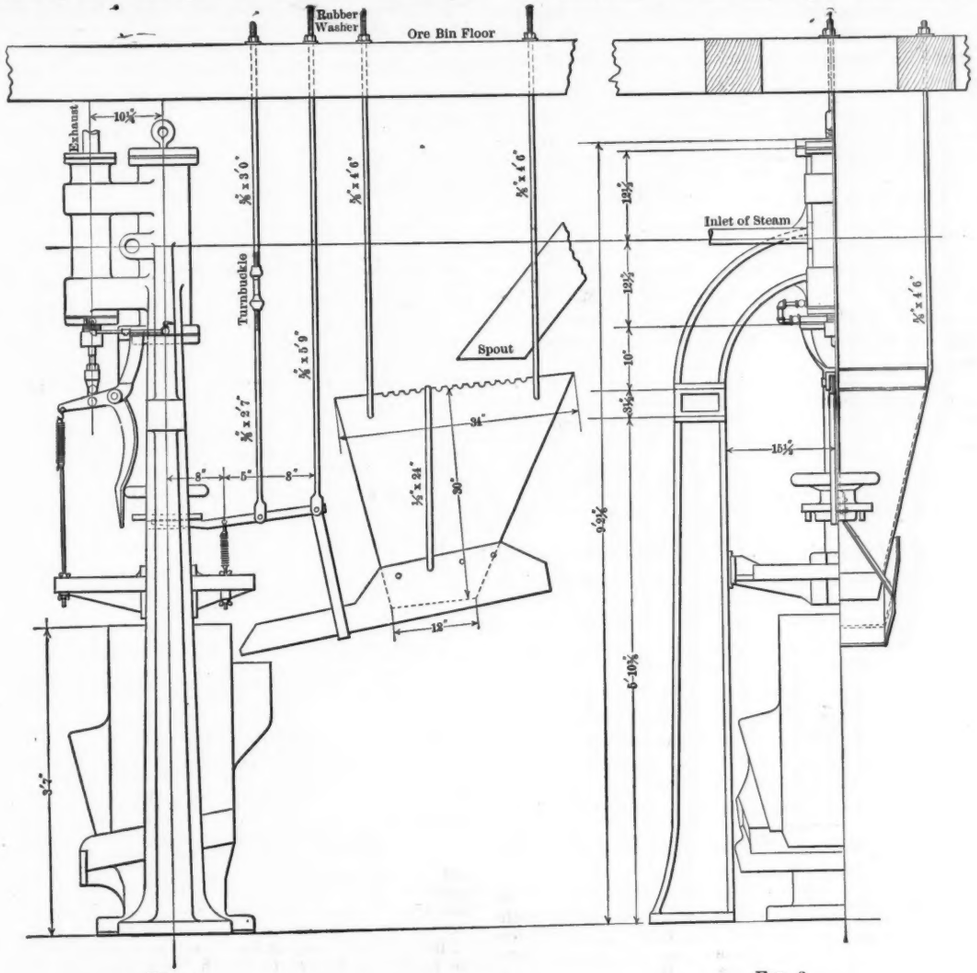



FIG. 1. FIG. 2.

THE WOOD STEAM STAMP.

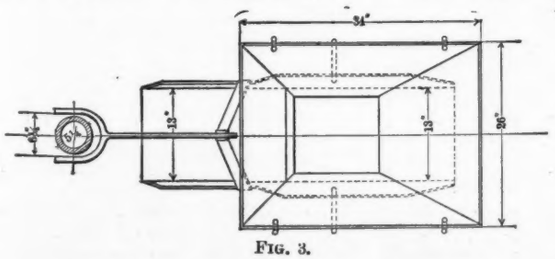



FIG. 3.

UTILIZING OLD SLAG HEAPS IN ENGLAND.—According to the London "Colliery Guardian," the cinder heaps, the refuse of extinct blast furnaces, which disfigure the Black Country landscape, are slowly but steadily disappearing from view. These vast heaps of what were so long regarded as waste refuse have been found to possess an economic value, and when broken up provide valuable material for ballasting the railway lines. At Willenhall the Midland Railway Company has acquired a huge hill of these cinders on the site of the long dismantled furnaces of the late firm of Fletcher, Solly & Urwick, which it is steadily removing and breaking up, and in other parts of the district a similar process is going on, to the mutual advantage of the railway companies and to the owners of the cinder heaps.

## QUESTIONS AND ANSWERS.

(Queries addressed to this department should relate to matters within the special province of this periodical, such as mining, metallurgy, chemistry, geology, mineralogy, machinery, supplies, etc. As it is manifestly impossible to devote space to all the questions and notes constantly received, preference will be given to topics which seem to be of interest to others besides the inquirer. We cannot here undertake to give professional advice on problems requiring special investigation and which should be obtained from a consulting expert. Nor can we undertake to give advice about mining companies or mining stocks. Brief replies to questions will be welcomed from correspondents. While names will not be published, all inquirers should send their names and addresses. Anonymous questions will not be answered. Preference will, of course, always be given to questions submitted by subscribers.—Editor E. & M. J.)

Cyanide Products.—Please let me know through your columns where I can have cyanide products reduced to bullion.—D. B.

Answer.—The Consolidated Kansas City Smelting and Refining Company some time ago began to make a specialty of the reduction of cyanide products. Nearly all the products from the mills in the Mercur District in Utah have been forwarded to this company's works for some time past. The Kansas City Company has been merged in the American Smelting and Refining Company, but this has made no difference in the business carried on.

Analysis of Slags and Flue-Dust.—In what treatise can I find how to test slags and flue-dust? That is to say, in what combination the different metals, whether as sulphides, sulphates, oxides, etc.—Analale.

Answer.—If you wish to analyze flue-dust and slags, a good work to consult is Furman's "Manual of Practical Assaying." If you want information as to the composition of these substances you will find, for lead furnaces, what you want in Hofman's "Metallurgy of head." For copper furnace slags and other products, Peters' "Modern Copper Smelting" will give data you need. The series of articles by Mr. Malvern W. Iles, the publication of which has been begun in the "Engineering and Mining Journal," will contain much information about the composition of slags and flue-dust.

Cyanide Assay for Copper.—In the assay of copper by the cyanide method, after the sample has been reduced to the stage ready for titration with the standard solution of KCY—after the ammonia has been added—the liquid is often found to be cloudy, due to the presence of the hydrates of lead, iron, etc. These carry some copper, especially the iron, and I would like to know the best way to treat this hydrate in order to get the most accurate results possible of the copper it contains. —W. B. L.

Answer.—Dr. Peters, in his description of the cyanide assay for copper ("Modern Copper Smelting," seventh edition, page 54), says: "Another indispensable and oft-neglected precaution is the testing of the precipitate of hydrated oxide of iron caused by the addition of ammonia to the original solution. This bulky precipitate, especially in the case of mattes and highly ferruginous ores, will retain a considerable amount of copper which even the most careful washing will not remove, but which may be speedily determined by dissolving the precipitate in the smallest possible quantity of muriatic acid, saturating with ammonia, and again titrating if any blue coloration is produced."

You will do well to consult the whole of Dr. Peters' full and careful account of the cyanide assay, from which the above extract is taken.

Limestone and Iron Ores.—What is the usual proportion of limestone used as flux in smelting iron ores?—B. H.

Answer.—The proportion of limestone used as flux depends on the composition of the ores, the proportion of iron and many other points. Some of the Alabama brown ores, for instance, carry a considerable quantity of lime, which serves as a flux in the blast furnace, and only a small addition or none at all is needed. Different ores need different quantities of flux, and ores from the same deposit will vary from time to time in their needs for flux.

If you want a general average, you will find that the quantity of limestone used for flux in pig iron making in the United States last year was 5,275,819 long tons, giving an average of 0.448 ton to the ton of pig iron made ("The Mineral Industry," Volume VII., page 477). This does not establish any rule, however, by which it is possible to work. Thus, in an extended series of experiments with Alabama ores ("The Mineral Industry," Volume V.), the limestone used varied from 0.12 ton to 1.08 tons per ton of pig iron made. In the former case the ore carried a considerable quantity of lime; in the latter it was of low grade, 2.25 tons being required to make a ton of iron. This is given only as an instance of the variations.

Gasoline Engines Underground.—I have seen a good deal in the "Engineering and Mining Journal" about gas and gasoline engines for mining use. Could such engines be used underground, to run a pump, for instance? What would you suggest as to the benefits, or otherwise, of such engines?—N. M.

Answer.—Whether it would be advisable to use a gasoline or oil engine underground would depend upon the conditions of the mine. The advantages of such an engine would be, of course, very much the same as on the surface; economy, ease in running, the saving of the cost of a boiler plant or of the pipes for transmitting steam or air from the surface, with the usual losses incident to that transmission. On the other hand, it must be remembered that the gasoline engine gives out a good deal of heat, and it would not be advisable to use it underground except where the mine is well ventilated. Nor would it be advisable to use it in a coal mine which is at all gassy as there might be serious danger of fires. Possibly this danger is not much greater than that from sparking where electric transmission is used, but it should be investigated. Again, the transportation and care of the oil used requires to be watched. The storage underground of any quantity beyond that needed for immediate use would hardly be prudent.

With these points in mind and knowing the local circumstances, you can determine whether it is advisable to use a gas engine underground in your mine. A saving in cost is very probable; but in many cases safety is more to be considered than the reduction of costs.

RAILROADS IN INDIA.—The Administration Report on the railways in India for the year ending March 31st, 1899, shows that the total network opened and sanctioned is 26,059 miles, an increase of 604 miles during the year. The total actually opened for traffic, however, is 22,491 miles, showing a net increase of 1,334 miles for the year. On the Indian railways, 4,967 Europeans, 6,996 Eurasians and 296,700 natives are employed.

ELECTROLYTIC EXTRACTION OF QUICKSILVER.—The "Journal of the Society of Chemical Industry" describes this process. The raw material (cinnabar) is crushed to a fine powder, and then treated with a hot solution of sodium sulphide containing caustic soda. The electrolytic vats are of iron, and may be used as cathodes; the anodes are of sheet steel. It is stated that the mercury can be readily separated from the upper part of the cell, and is enriched with equivalent amounts of copper, silver, zinc, cadmium, nickel, and iron in the lower or anodic compartment of the cell. The solution on issuing from the cell is then passed through a series of vessels, in which the silver is displaced by copper by simple chemical action. Copper equal to about 1/14 of the weight of the alloy used, has to be consumed in these, in order to effect the desired precipitation of the silver.

It is not possible to remove the last traces of silver by this method, but the amount found in the deposited copper should not exceed 0.03 per cent. when the process is working satisfactorily. After passing through a series of the sulphide solution by using a current density of 0.5—0.8 ampére per square decimetre and an E.M.F. of 2 volts, the electrolyte can be used again for extracting fresh ore after addition of sulphur.

## PATENTS RELATING TO MINING AND METALLURGY.

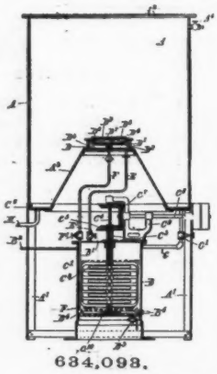
### UNITED STATES.

The following is a list of the patents relating to mining and metallurgy and kindred subjects issued by the United States Patent Office. A copy of the specifications of any of these will be mailed by the Scientific Publishing Company upon receipt of 25 cents.

Week Ending October 3d, 1899.

634,049. MINE-CAR CHECK HOLDER. Charles R. Williams, Georgel, Va., assignor of one-fourth to C. W. Shafer, Landgraff, W. Va. A mine-car having an attached check-holder provided with a check-seat, from which a check may be dislodged by the movement of the car to a discharging position, and having means for preventing dislodgment when the car is in its normal position.

634,093. APPARATUS FOR MANUFACTURING HYDROGEN PEROXIDE. Sigmund Rosenblum and Charles J. Yarnold, London, England, assignors to the Commercial Ozone Syndicate, Limited, same place. In combination with the vessel containing the turpentine and ozone under pressure, a dish or receptacle having a vertical annular flange, a second dish carried by the first dish, leaving a space between said dishes, a cover for the dish, a pipe leading from the



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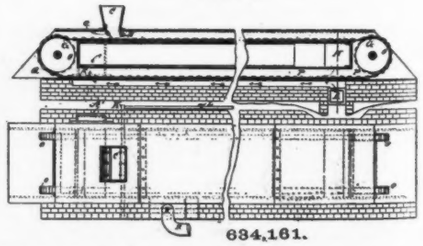
634,120.



634,161.

space between the dish and cover to the lower portion of the interior of a receptacle, a pipe leading from the space between the dishes to the top portion of the interior of the receptacle, tubular spindles secured in the bottom of the dish, the nozzles carried by the plate having tapered passages into which the tubular spindles open, a cover having tapered holes therein into which the nozzles extend, and a steam-pipe communicating with the space between the cover and plate.

634,120. PROSPECTOR'S PAN. William H. Moore, Deadwood, S. D., assignor of one-third to Kittie Z. Kidd, same place. A prospector's pan provided with indentations or corrugations made circumferentially in the inner face of the rim forming a riffled surface, the said corrugations extending only partly around the rim, the remaining portion of the rim at its inner face being smooth from the top to the bottom of the rim.

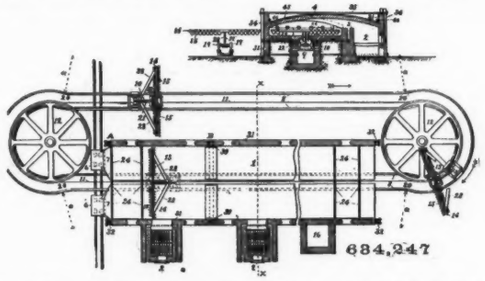
634,161. RETORT FOR CARBONIZING WOOD. William H. Bowers, Manchester, England. A single endless bar-chain, running in a horizontal plane, a hot-air flue below the lower portion of the chain, a hot-air flue in the space between the upper and lower portions of the chain, a connection between the lower flue and the intermediate flue consisting of an outside elbow and an exhaust-pipe, connected with the spaces in which the chain travels.

634,199 and 634,200. MECHANICAL DRIER. Franklin D. Cummer, Cleveland, Ohio; William M. Cummer, administrator of said Franklin D. Cummer, deceased, assignor to the F. D. Cummer & Son Company, same place. The process of drying materials consisting of the following steps: First, passing the material to be dried through a drying-chamber to dry the same, more or less completely; second, sifting or screening out the dried portions; third, reducing the larger undried portions to smaller particles, and fourth, mixing and redrying said undried particles with raw material.

634,223. FIRE-MOUTH FOR KILNS. Walter M. Viall, Barberton, Ohio. An improved fire-mouth for kilns consisting of an arched opening for firing extended in front of the kiln-wall, an air-duct below and extended in front of said firing-opening, a fire-table of open brick-work extending from the front of the air-duct to the inner line of the kiln-wall, and a bag within and connected with said side walls, opening into said kiln above said firing-opening and inclosing and internally connected with said fire-table and ash-pit.

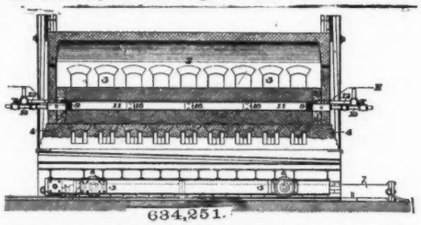
634,245. PRESS FOR BENDING AND STRAIGHTENING METAL BARS, ETC. Walter J. Muncaster, Cumberland, Md., assignor of one-half to The Cumberland Iron and Steel Shafting Company of Allegany County, Maryland, same place. The combination of a work-support adapted to sustain the work at two separated points but to permit its deflection beyond the line of said supports at a point between them; a cylinder; a ram movable within said cylinder; and a stop or shoulder serving to limit the outward movement of said ram relatively to the cylinder, whereby the ram is prevented from deflecting the work beyond a predetermined point.

634,247. ROASTING AND OXIDIZING FURNACE. Alfred Ropp, Selby, California. An elongated furnace-chamber provided with a roasting-hearth and conduit beneath; a series of rakes or rabbles connected by an endless rope, located in the conduit, and impelled by wheels


634,247

or pulleys at the ends of the furnace, said rakes or rabbles being supported and guided by cars or trucks mounted on ways beneath and outside the furnace, each of said ways having a double or reverse curve and increased radius around the wheels or pulleys, so that the impelling-rope will enter upon and leave the guiding and driving pulleys without lateral strain.

634,251. PROCESS OF CARBURIZING ARMOR-PLATES. John S. Unger, Homestead, Pa., assignor to the Carnegie Steel Company, Limited, Pittsburg, Pa. The process consists in introducing into contact with the steel hydrocarbon gas while the steel is at a temperature

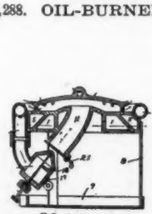

634,251.

less than the working temperature of 875° to 1,000° C., thereby causing a deposit of carbon at a relatively low heat, and then raising the temperature to the working point, continuing the heating and admission of gas for a period of days, and depositing graphitic carbon upon the plate at such higher temperature.

634,254. PULVERIZER. Robert Yates, St. Louis, Mo. The combination of a cylinder casing provided at or near one end with a securing flange or portion, a hollow head formed with flaring walls, an oppositely-flaring ring located in said head and provided with radial plates extending beyond its external periphery and between said head and securing-flange, means for securing said head to said flange and clamping said partitions.

634,271. PROCESS OF EXTRACTING ACETIC ACID FROM ALKALINE ACETATES. Henri Plater-Syberg, Paris, France. The process consists in first separating the acetic acid from the alkali by electrolysis cold in a trough provided with a positive electrode of iron or other equivalent metal and having the two electrodes separated by a porous partition, then in transforming the ferrous acetate thus formed into a ferric acetate by oxidizing with air, next in acting under the influence of heat upon this ferric acetate with neutral acetate of potash, and finally in decomposing by heat the biacetate thus obtained into acetic acid and neutral acetate of potash.

634,288. OIL-BURNER. John R. Duncan, Indianapolis, Ind., assignor to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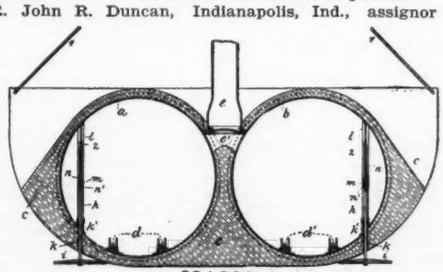
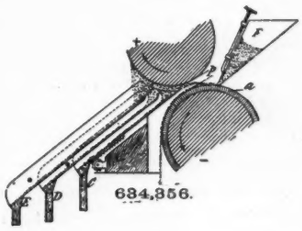

634,322.

Samuel V. Perrott, same place. An oil-burner including a retort formed of a series of annular chambers, one provided with a relatively broad bottom, the next one with a relatively broad top, and the third higher than the other two, means for introducing oil into the chamber with the broad bottom, means below said chambers for initially heating them, a burner so formed as to deflect the flame directly against the upper walls of the outer chambers, and means for conveying the vapor from the last chamber in the series to the burner.

634,322. SUBMARINE TUNNEL. Charles H. Buckelew, Plainfield, N. J. The combination with tunnel-sections, of a series of adjustable piers, each comprising a bearing-plate outside of the section, an approximately vertical shaft connected therewith and passing up through and within the tunnel-section, a means for adjusting and for clamping the position of the said shaft and bearing plate.

634,356. ELECTRO-MAGNETIC APPARATUS FOR SEPARATING ORES. Emil Kreuser, Mechernich, Germany. An electro-magnetic ore-separator, consisting of two revolving, cylindrical electro-magnets arranged one above the other and having cylindrical polar surfaces, the rotation of which produces a magnetic field bulged in the direction of rotation, a cylindrical, non-magnetizable covering tightly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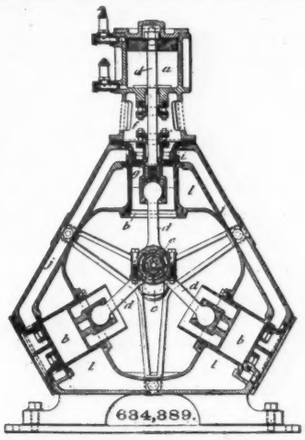
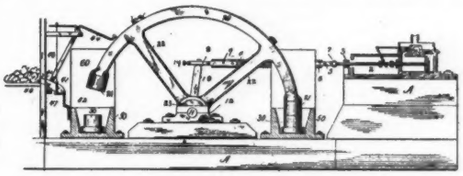
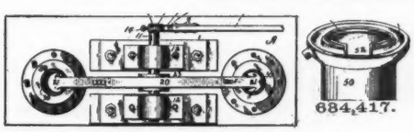

634,389.

fitting the lower cylindrical polar surface to weaken its magnetic attraction relative to that of the upper cylindrical polar surface which raises the ore particles consecutively through polar fields of gradually-decreasing strength, and inclined chutes, arranged to correspond accurately with the several zones of the separated falling ore particles.

634,389. DIRECT-ACTING AIR-COMPRESSING ENGINE. Peter Brotherhood, London, England. A direct-acting air-compressing engine comprising a double-acting steam-cylinder having its piston connected to the piston of an air-compressing cylinder in line with the steam-cylinder, and two other air-compressing cylinders having their pistons connected to the same crank with the other and the air-cylinders being provided on their outer ends with apertures furnished with suitable suction and discharge valves.

634,417. STAMP-MILL. Alexander C. Pratt and Charles A. La Grave, Carson, Nev., assignors to the Ideal Stamp Mill Company, of Nevada. In a stamp-mill, a rigid reciprocating stamp supported on a journaled shaft and provided with shoes at each end, a mortar and

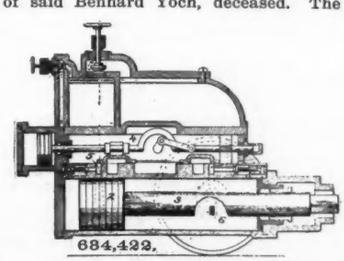



634,417.

die on which the stamp may strike a blow at each end of the reciprocating movement, and means for starting the stamp-bar, then releasing the stamp-bar and permitting the momentum of both stamps and bar to become available in the blow at either end of the bar.

634,416. CONCRETE-MIXER. Samuel P. McKelvey, Chicago, Ill., assignor of one-half to O. G. Hursen, same place. In a concrete-mixer a rotatable drum mounted horizontally on external bearings, the periphery of the drum corrugated longitudinally, apertures in each head of said drum, a partition transversely through the corrugations therein, a circulating water-pipe longitudinally through said drum and provided with an external support independent of said drum and imperforate over that portion of the drum between the partition and feeding-aperture adapted to provide a dry and wet mixing in said drum.

634,422. MINING-ENGINE. Benhard Yoch, Belleville, Ill., Agnes Yoch, executrix of said Benhard Yoch, deceased. The combination of a


634,422.

cylinder, a piston located within the cylinder, and a segmental fluid port or passage communicating with the cylinder beneath the horizontal central line of the piston.

## PERSONAL.

Mr. Charles de Wendel of the Hayange Iron Works in France, is visiting this country.

Mr. Geo. W. Teal is superintendent of the Pennsylvania group of mines, Boulder, Colo.

Mr. N. S. Berry is now Superintendent of the Commonwealth Mining Company at Pearce, Ariz.

Mr. William H. Coolidge, of Boston, is devoting a week to Utah mines in which he is interested.

Mr. Norman M. Estey has returned to Leadville after a 2 months' visit to New York and Boston.

Mr. Ellery Bassett, of New Bedford, Mass., has been in Prescott, Ariz., examining some mining properties near there.

Col. Frank Hecker of Detroit and a party of friends recently inspected the Victoria copper property near Rockland, Mich.

Mr. J. Wise, assayer at the Bi-Metallic Smelter at Leadville, has accepted a professorship at the School of Mines at Golden.

Mr. C. C. Burger, who has been examining mining property in Mexico some time past, has been in Denver and Chicago, recently.

Mr. Victor M. Clement returned to Salt Lake City from Mexico last week. He will remain in Utah and Idaho for several weeks.

Mr. E. F. Scattergood has been appointed professor of mechanics in the School of Mechanical Engineering of the University of Georgia.

Mr. A. B. C. Davis, formerly of the Fowler Smelter at Ouray, has been appointed superintendent of the smelter at Buena Vista, Colo.

Mr. John Howell, formerly of California and Nevada, is now superintendent of the Bora Creek silver-lead mine at Inverell, Australia.

Mr. Paul A. Fusz of St. Louis, Mo., president of the Granite Bimetallic Company, has been on a visit to the company's property in Montana.

Manager J. H. Weddle of the Arkansas Valley and Union smelters at Leadville, Colo., has returned from the East greatly improved in health.

Mr. Benedict Crowell, of Cleveland, O., recently looked over placer claim on Jump-off-Joe Creek, near Grant's Pass, Ore., in which he is interested.

Dr. H. J. Cameron, of the Romanoff Land and Mining Company, was seriously wounded at Alexander City, Ala., recently in a duel with Dr. P. D. Mahoney.

Mr. R. J. Anderson, manager of the Twin Springs syndicate operating several prominent Idaho mines, is in Philadelphia. He is to return to Boise by the middle of November.

Mr. William Van Vleck Lidgerwood, president of the Lidgerwood Manufacturing Company of New York, who has charge of the company's plant in Scotland, is visiting this country.

Mr. R. J. Allison, secretary of the Golden Eagle Mining Company at Leadville, leaves for California this month to be absent about a year. Mr. Allison is succeeded by Mr. W. W. Davis.

Mr. John H. Converse of the Baldwin Locomotive Works of Philadelphia, Pa., has given $50,000 to the University of Vermont for endowing a professorship of commerce and economics.

Mr. S. Misaki, general superintendent and chief engineer of the Shadzuoki & Yokaichi Interurban Electric Railway of Japan, is studying the electric railway systems of this country.

Mr. R. S. Burbridge of Boston, largely interested in the new Comstock and Revenue mining companies at Leadville, Colo., was a visitor to that camp last week looking over the propositions.

Mr. L. W. Tatum, general manager of the Providentia Mining and Milling Company at Dolores, Hidalgo, Guanajuato, Mexico, paid Denver, Colo., a visit last week, after about four years' absence.

Mr. G. W. Holmes, of Paducah, Ky., has been selected by the management of the United States Cast Iron Pipe Company to succeed Mr. J. K. P. Dimmick in charge of the pipe plants at Anniston and Bessemer, Ala.

Mr. Clifford Graham, who has had charge of the prospecting work at the Odin Mine, has been appointed superintendent of the Reddik drift gravel mine on Selby Flat, Nevada County, Cal., to succeed Mr. John Skewes.

Mr. A. F. Holden, managing director of the United States and Centennial-Eureka companies arrived in Salt Lake City from New York 10 days ago. About the middle of November he is to sail from San Francisco to South America.

Mr. A. A. Vernon, late of Mysore, India, and one of the directors of the British Lion Gold Mining Company of Owen Sound, Ont., has been making a personal inspection of this company's properties in the Nelson Division of British Columbia.

Mr. R. Kirschbaum, who is to have charge of the erection of the Garvin Machine Company's Works in Berlin, Germany, has been present at the New York offices of the company making extensive purchases for the undertaking.

Mr. Horace F. Brown of Chicago is at present in Philadelphia, where he is attending the National Export Exposition and the Commercial Congress. He represents Fraser & Chalmers, and is doing good work in the education of foreign visitors in American mining machinery and processes.

Mr. Alfred C. Garde has resigned his position as assistant superintendent of the Anaconda Copper Mining Company, in charge of the foundry department at Anaconda, Mont., to take charge, as mechanical engineer, of the new construction work contemplated by the Centre Star and War Eagle Mining companies, Limited, at Rossland, B. C.

## OBITUARY.

Horace S. Smith, an ex-vice-president of the Illinois Steel Company, died at his home in Chicago, October 17th. He was 73 years old.

Lorenzo Dow died in New York City, October 12th, after a lingering illness. He was born in Paris, Me., in 1825, graduated from Wesleyan University in 1848, and soon after went to the Pacific coast mines, and took part in the early history of Virginia City. He returned to New York for a short time in 1852, but again went West, settling in Kansas, where he became the first Mayor of Topeka. During the war he gave his attention to the improvement of ammunition, and invented a waterproof cartridge. After the war Mr. Dow spent several years in South America, where he acquired interests in gold mines in the United States of Colombia. Returning to the United States in the early seventies, he became identified with the devlopment of silver mining, and the railroad and irrigation systems of Colorado.

## SOCIETIES AND TECHNICAL SCHOOLS.

Australasian Institute of Mining Engineers.—The general meeting of the Institute was held this fall at Rockhampton in Queensland. Sessions were held at Rockhampton from Monday, September 18th, to Tuesday, September 26th, for the transaction of business and the reading and discussion of papers, six sessions in all. Local excursions comprised visits to the Rockhampton Harbor and River works, Lakes Creek Meat Works (the largest in Queensland), the New Railway Bridge over the Fitzroy River at Rockhampton, and Olsen's Caves. These caves are good specimens of limestone formation, interesting to geologists and extremely pretty. Mr. E. Holcombe-Hewlett was secretary of the local committee. The list of papers read at the meeting included the following: "Mine Stores," by F. Danvers Power; "Safety Appliances and Precautions necessary in Mines," by J. R. Godfrey; "Relation of Granite and Sedimentary Rock Contacts to Mining in Victoria," by W. H. Ferguson; "Methods employed in Winning the Diamonds on the Vaal River Alluvial Fields," by Percy R. Day. Several other papers and addresses were presented.

## INDUSTRIAL NOTES.

The rail mill of the Pennsylvania Steel Works at Steelton, Pa., on one turn of 12 hours recently rolled 496 tons, the largest output in the history of the plant.

The Ingersoll-Sargent Drill Company of New York City has booked an order for 12 large air compressors for John McDonald & Company, of Glasgow, Scotland.

The Colonial Chemical Company, lately incorporated in New York, has increased its capital stock from $100,000 to $200,000. The amount of capital stock paid in is $75,000, and the total debts and liabilities $22,963.

It is reported that New York parties have bought the Paducah iron furnace near Paducah, Ky., which was erected several years ago but never went into blast. The capacity of the furnace is to be increased to 200 tons of pig daily.

The Acheson Graphite Company of Niagara Falls has closed a contract with a European firm for 96 tons of graphitized electrodes. The carbon rods for graphitization will be furnished by the National Carbon Company, and the work is to be done in the next 4 months. The furnaces of the Carborundum Company will be used for the work.

The Union Steel Company has been organized at Philadelphia with a capital of $1,000,000 which may be increased to $5,000,000, it is said, to fight the American Steel and Wire Company, which has control of the wire plants of the country. The plant will be on the Monongahela River and work on the erection of the buildings is said to have begun. It is stated that the Carnegie Steel Company is behind the new enterprise.

The Union Boiler Tube Cleaner Company, of Pittsburg, Pa., has recently finished the largest contract ever awarded for cleaning boilers, this being for 22 water tube boilers, containing an aggregate of 10 miles of 4 in. tubes. It has just shipped its eighth machine to England and Scot- shipped just 1 year previously.

The Potomac Steel Company, which leased the old rolling mill plant at Cumberland, Md., is rerolling steel rails. Mr. W. W. Macfarren is superintendent. The present force consists of about 50 men. When the puddle mill is in operation from 300 to 400 men will be employed. The mill has been idle for nearly 10 years. It was started in 1871 by the Baltimore & Ohio Railroad Company, and at one time 815 men and boys were employed.

The Berlin Iron Bridge Company, of East Berlin, Conn., is shipping to Mexico structural iron material for roofing a building 80 ft. wide and 255 ft. long. The roof is to be erected on masonry walls. It is for the San Rafael Paper Company, City of Mexico, and is a duplicate of work furnished something over a year ago. The Berlin Company also has the contract for a bridge at West Seneca, N. Y. The bridge is 20 ft. wide and 117 ft. long, of the through riveted type of trusses, with steel floor system.

It is stated that a company in which Thomas A. Edison of Orange, N. J., is interested, is to build a cement plant. The location of the plant has not been determined. Most of the machinery will be of special design. Some will be built at the Edison plants. The Edward P. Allis Company of Milwaukee, Wis., will furnish 3 vertical compound engines, 2 of 700 H.P. and 1 of 500 H.P. The boilers will be furnished by the Clonbrock Company of Brooklyn, and will be of Climax type. W. S. Mallory of Orange, N. J., is constructing engineer.

The property of the Virginia Iron, Coal and Coke Company now includes 16 furnaces, 31 iron ore mines, 8 coal mines, 700 coke ovens, 8 limestone quarries, 125,000 acres of coal lands, 100,000 acres of ore lands, cast iron pipe works, a horseshoe factory and rolling mill, and basic open-hearth steel plant. The furnaces are 2 at Roanoke, Va.; 1 at Buena Vista, Va.; 1 at Radford, Va.; 1 at Graham, Va.; 1 at Pulaski, Va.; 1 at Max Meadows, Va.; 1 at Bristol, Va.; 1 at Reed Island, Va.; 1 at Embreville, Tenn.; 1 at Carnegie, Tenn.; 3 charcoal furnaces in Tennessee, and 2 to Middlesboro, Ky. The steel plant consists of seven 25-ton basic open-hearth furnaces, a 32-in. blooming train, 10-in. hydraulic shears and a 22-in. rolling train. The horseshoe factory and rolling mill are at Max Meadows, Va. The cast iron pipe factory is at Radford, Va. At Pulaski, Va.; Embreville, Tenn.; Middlesboro, Ky., and at Toms Creek, Va., are foundries, machine shops and wood working plants. The coal mines are on Toms Creek and Looney Creek.

## TRADE CATALOGUES.

As No. 15 in its "Record of Recent Construction," the Baldwin Locomotive Works, of Philadelphia, prints a discussion of a paper on the Wooten boiler by S. M. Vauclain at a meeting of the New York Railway Club. The paper and the discussion are printed as an attractive 22-page pamphlet, illustrated by numerous half-tone cuts of locomotives having Wooten boilers.

One of the latest publications of the Joseph Dixon Crucible Company of Jersey City, N. J., is entitled "Making Records." It sets forth the many excellent qualities of Dixon's pure flake Ticonderoga graphite as a lubricant, and gives many testimonials. In the many forms in which graphite is prepared by the company it is adapted to all machinery. For lubricating the gears of electric railway cars the company recommends Dixon's graphited wood grease, made of flake Ticonderoga graphite, fine-ground Florida cedar and suitable oils and greases.

The Jeffrey Manufacturing Company of Columbus, O., has had some of his admirable catalogues translated into various foreign languages and is looking sharply after export business. Catalogue No. 51, "Bandas de Cadena y Cables de Acero," contains a full list of all the various types of conveyors, chain belts, buckets and other carrying devices that have made the name of Jeffrey famous. It is bound in the familiar bright red cover and makes a book of 196 pages. The only criticism we should make is that dimensions of chains, cables, buckets, sprockets, etc., are given in feet and inches, and weights and tensile strengths in pounds. The simpler and handier metric equivalents should, it seems to us, be used by all American firms seeking trade in any but English-speaking lands.

The Robins Conveying Belt Company of New York City has just issued a new edition of its catalogue of belt-conveying machinery. This 40-page pamphlet contains half-tone cuts showing the points of excellence the belt, idlers, grease cups, trippers and take-ups furnished by the Robins Company for its belt conveyors. Other cuts show Robins conveyors in actual use for a great variety of purposes, transporting such diverse materials as sand, broken stone, coal and coke, gold ore and copper pyrites. The pamphlet states clearly the advantages of belt conveyors and will doubtless be of interest to all persons interested in the mechanical handling of materials. The Robins Company was organized to perfect the system of belt conveying, and the company states that its success in its undertaking is shown by its rapidly increasing sales, Robins conveyors being now in actual use in many parts of the world, though the company was organized no farther back than 1896.

## MACHINERY AND SUPPLIES WANTED.

If any one wanting machinery or supplies of any kind will notify the "Engineering and Mining Journal" what he needs he will be put in communication with the best manufacturers of the same.

We also offer our services to foreign correspondents who desire to purchase American goods, and shall be pleased to furnish them information concerning goods of any kind, and forward them catalogues and discounts of manufacturers in each line.

All these services are rendered gratuitously in the interest of our subscribers and advertisers; the proprietors of the "Engineering and Mining Journal" are not brokers or exporters, nor have they any pecuniary interest in buying and selling goods of any kind.

## GENERAL MINING NEWS.

Oil Exports.—In September the exports of mineral oils from the United States amounted to 92,653,787 gals., distributed as follows: Crude, 11,825,319 gals., naphthas, 3,287,854 gals.; illuminating, 71,890,210 gals.; lubricating and paraffin, 5,456,406 gals.; residuum, 193,998 gals. During the 9 months ending September 30th the total exports were 714,769,191 gals., as against 765,078,044 gals. in the corresponding period last year.

### ARIZONA.

#### Cochise County.

Copper Belle Mining Company.—This company informs us that it has now purchased and paid for 4 additional claims, making 7 it owns, 6 being in one compact group, and the other about ½ mile distant. The property is about 13 miles south of the Commonwealth Mine at Pearce. Three shafts have been sunk, 2 down about 70 ft. and connected by drifts at the 60 ft. level, with a winze some distance from this level about half way between the shafts. Another shaft about 500 ft. distant had been sunk 106 ft. and there drifting is going on, and the shaft is to be sunk further. The only ore shipments so far have been 7 car-loads taken out in development and sent to the Silver City Reduction Works at Silver City, N. M., which gave good returns in copper and silver with a little gold. The company intends to prospect the ground thoroughly in order to work it to the best advantage. M. H. Twomey, formerly with the Commonwealth Mine, is manager.

#### Mohave County.

Merrimac.—This mine, 1 mile west of Chloride, has a 340-ft. shaft and considerable development work done, showing a vein 4 to 10 ft. wide between porphyry and quartzite. The ore is high grade silver, carrying some gold. The surface plant includes a Gates crusher and a Huntington mill.

Security Mining and Developing Company.—This company, of which Dr. Theo. B. Comstock is president and manager, owns the Elkhart Mine at Chloride, on the same ledge as the Tennessee. The shaft is down 400 ft. and over 3,500 ft. of development work has been done. The surface plant comprises a steam hoist, a "Comet" crusher, 2 sets of rolls, 4 sets of jigs and 3 Frue vaners. The mill has a capacity of 100 tons daily, but a short supply of water greatly restricts the output. About 50 men are employed when the plant is running full time.

Wallapai Mining and Development Company.—This company, of which E. T. Loy is president and general manager, owns the Tennessee Mine, in Chloride. One shaft is down 300 ft. and the other 200 ft. Steam hoists, 2 sets of Davis high-speed rolls, a Blake crusher, 5 sets of jigs and 2 Wilfley tables are part of the surface plant. The water used at the mill is caught and used over, minus what evaporates. The vein opened is 5 to 20 ft. wide between quartzite and porphyry, and the ore runs in gold, silver and lead, the principal value being lead. About 55 men are employed.

#### Yuma County.

Harqua Hala.—The mill at this mine which for some years belonged to an English company, is reported running on good ore. A. G. Hubbard is principal owner of the property, and Charles Pickinback of Harqua Hala is superintendent.

### CALIFORNIA.

California State Miners' Association.—The Nevada County Branch of the association has elected all the old officers to serve for another year, as follows: President, Frederick Zettler; vice-president, George Mainhart; secretary, W. F. Englebright; assistant secretary, Jas. F. Colley; treasurer, B. F. Snell; executive committee, R. C. Walrath, C. J. Brand, George Fletcher, D. B. Marwick, J. S. McBride, E. T. Worthley, C. D. Eastin, O. K. Cloudman, John Fay, L. L. Myers, H. C. Schroeder. The matter of appointing delegates to the State convention was left entirely to the executive committee.

A letter from E. H. Benjamin, secretary of the State Association, was read. In it the secretary said: "It is proposed to make this convention (the annual State convention at San Francisco) an inter-State convention, inasmuch as invitations will be sent to the governors of all the mining States west of the Mississippi to attend in person and to send 10 representative delegates to participate in our deliberations. Two important features will be brought before the convention, the first relative to the establishment of a department of mines and mining in the national government, and the second the preparation of an act to be presented for passage by the Congress of the United States relative to mining locations."

#### Amador County.

(From Our Special Correspondent.)

Bay State.—On the 700-ft. level at this mine, 4 miles north of Plymouth, a 7-ft. ledge of milling ore has been struck. The 10-stamp mill is running continuously.

Lincoln.—At this group of mines, north of Sutter Creek, the shaft is down 1,130 ft. The crosscut on the 500-ft. level, for the west vein channel, is in 100 ft. The north drift is a mixture of quartz and slate. Power drills are to be installed.

Shenandoah Mining and Milling Company.—The latest developments at the Easton mine, 2 miles north from Plymouth, are likely to revive activity on the mother lode belt in that locality. The new incline is 300 ft. deep. In the 100-ft. level ore is exposed assaying $16 per ton. Pay ore in the 200-ft. level is 6 ft. wide, showing 4 ft. of ribbon ore assaying $10 per ton gold. This is presumed to be the downward continuation of ore worked superficially 235 ft. north of the incline years ago. The now dormant Red Cloud Mine adjoins the Easton north. T. J. Parsons is president of the Shenandoah Company, and S. K. Thornton superintendent.

#### Calaveras County.

(From Our Special Correspondent.)

Royal.—The shaft at this group of mines, 2½ miles northwest from Copperopolis, is down 1,000 ft. in good ore. The 40-stamp mill is running steadily.

Garner.—A two-third interest in this property, on the Mokelumne River, ¼ mile east from Big Bar Bridge, has been purchased by O. P. Posey, of Denver; G. S. Holmes, of Salt Lake, and A. Coram, of Boston. Price reported $47,000. Sydney Smith retains a one-third interest. The old mill is being torn down, and will be replaced by a new 10-stamp mill and concentrators. The new shaft will probably cut the ledge at 500 ft.

Union.—The buildings at this old copper mine, at Copperopolis, are being repaired, new tracks put down, supplies hauled in, and the water in the main shaft baled out, preparatory to opening the mine.

#### Eldorado County.

Placerville Slate Company.—This company, which was organized about one year ago with J. F. Moody of Truckee as president; T. R. Jones, Sacramento, secretary and treasurer, and Col. G. W. Cummings of Placerville vice-president and manager, is now filling a large order for the Mountain Copper Company, which is having all of the roofs of its extensive plant at Keswick changed from metal roofing to slate.

(From Our Special Correspondent.)

Eagle.—The quartz property, comprising 3 claims, located 1½ miles northwest from Grizzly Flat, in the Mount Pleasant Mining District, is being worked by the owner, L. J. Kendrick. The shaft is now down 225 ft., developing an ore chute 3½ ft. wide. The tunnel is in 790 ft., showing an ore body 170 ft. long and 4½ ft. wide, assaying from $15 to $18 per ton. About 20 tons of good milling ore are on the dump.

#### Placer County.

(From Our Special Correspondent.)

Eureka Consolidated.—The work of extending the main tunnel at this drift mine, north of Sunny South, at the 3,000-ft. mark, and is now in 75 ft. About 5 ft. per day is made. Felix Chappellet, Jr., is superintendent.

Morning Star.—There is a rumor that the channel in this drift mine, at Iowa Hill, has taken a turn toward the Big Dipper claim, and that the life of the mine is drawing to a close. This property has been a bonanza for several years, paying as high as $6 per share per month.

#### Riverside County.

Mountain Beauty Mining Company.—The Fulton Iron Works of Los Angeles is to supply a 5 stamp mill and other machinery. The mine is 28 miles from Temecula and 10 men are at work there.

#### San Diego County.

(From Our Special Correspondent.)

Great California Mining Company.—This company owns and is working the Mercury, Old Pick and General Grant claims in Grapevine District. In the former a tunnel is now in 35 ft., 8 ft. of which is in ore assaying over $14 per ton. In the Old Pick a tunnel is in 30 ft., 12 ft. of which is in low grade ore. The shaft on the General Grant is down 30 ft.

#### Shasta County.

(From Our Special Correspondent.)

Balakalala.—The litigation is regard to this group of 11 claims, 7 miles northwest from Copley, has ended, and the option for $200,000 held by W. A. Temple, who represents a Canadian syndicate, will hold. The mineral belt carries gold, silver, copper and iron, with a gossan outcrop. The ore body will average 50 ft. wide. The development consists of 4 tunnels, 800, 200, 80 and 70 ft. respectively, and a few shallow shafts.

Oro Fino.—The shaft at this mine, 3 miles west from Shasta, is down 110 ft., and the vein has widened to 3 ft. of sulphurets. No assays have been given out. Eleven tons mined in developing were sent to the smelter at Keswick, and another lot will be sent to Selby's smelter.

#### Siskiyou County.

(From Our Special Correspondent.)

Carlson.—This group of copper claims, 5 miles west of Cole Station, has been bonded by L. A. Scowden and Sydney Smith to W. J. Cartan and O. P. Posey for $75,000. The ledge is 23 ft. wide, and samples from the 55-ft. shaft average 11% copper and $2.50 gold. Twelve men are working.

Commodore.—The output of this mine, at the head of Barkhouse Creek, 13 miles northeast from Scott Bar, for September was about $9,000.

Wheeler Mining Company.—This company, which is working the claim on the Nehrbas Place, adjoining the Greenhorn Blue Gravel Mine, has bought 2 large steam pumps, steadily at work handling the water. The shaft is intended to develop the old deep channel, which is thought to be very rich.

#### Trinity County.

(From Our Special Correspondent.)

Brown Bear.—The tunnel at this mine, at Deadwood, is in 2,300 ft., and will undoubtedly cut the ledge within the next 500 ft. An air compressor at the mouth of the tunnel furnishes power for 2 Burleigh drills. Seventy-five men are employed. Charles Dobler is superintendent.

Golden Jubilee.—At this mine, on Coffee Creek, the capacity of the mill has been increased to 20 stamps. The crew now numbers 18 men.

Maple Creek Mining Company.—This company has almost completed the 4½-mile ditch, and a pipe line over 3,500 ft. long is to be constructed. Their hydraulic property, on Maple Creek, 8 miles south from Junction City, comprises 1,600 acres. Eight miles of road has been completed and a saw mill erected. The management says that $150,000 will be expended before the property is on a paying basis.

Trinity River Gravel Bars.—The bond on this property, which includes 26 mineral claims and 360 acres of timber and other land, reaching from Comstock to Crooked Bend, a distance of 7 miles, has expired, but a sale will probably be made to a Chicago syndicate, which has an expert on the ground.

#### Tuolumne County.

(From Our Special Correspondent.)

Pauper's Dream.—This mine, north from Big Oak Flat, is the west extension of the Longfellow. The shaft is down 300 ft., and high-grade ore has been cut in both drifts, as well as in the 200-ft. level. The mine is worked by a Boston company under the management of J. M.

### COLORADO.

#### Boulder County.

Boston Mill.—This old mill at Ward has been taken under bond and lease by N. West, and is running.

Comstock-Sullivan.—This mine at Ward has been bonded to an Eastern company for $25,000. The mine is equipped with a steam hoist and 12-stamp mill, and is developed by a 240 ft. shaft and 500 ft. of levels. The company proposes to sink the shaft another 100 ft.

Struggler.—On this claim a 4 in. streak of ore in the 250 ft. east level is reported to run $100 to the ton. About 15 men are working on development.

Trade Dollar.—This claim at Ward has been sold to John Wright for $5,000. The property is developed by two 40 and one 65 ft. shafts, with a 35 ft. level connecting the 2 east shafts. In the bottom of the deepest shaft the pay streak is 18 in. wide.

Clear Creek County.

Mammoth Gold Mining, Tunnel and Railway Company.—The company's property is about 3 miles from Idaho Springs and the objective point of the tunnel is the Black vein. The tunnel is in 1,200 ft., and about 1,200 ft. more will have to be driven to reach the vein. At the annual meeting in Denver the following directors were elected: W. F. Rankin and David Allison of Tarkio, Mo.; Judge T. J. Porter of St. Joseph, Mo.; J. M. McMichael of Plattsburg, Mo.; H. J. Mayham, W. H. Combs and F. A. Williams of Denver.

(From Our Special Correspondent.)

Bay State Mining Company.—A fine body of mineral on the east side of the shaft at 400 ft. is exposed, and the Specht Mill has started to treat it by concentration. A 2,500 ft. tunnel has started to cut this and other veins in Albro Hill at a depth of over 1,000 ft.

New Dunderberg Mining Company.—The United States Court of Appeals sitting in St. Louis, Mo., affirmed the decision of the Colorado Court of Appeals that this company took ore from the Frostburg ground belonging to R. O. Olds of Georgetown. Verdict was for $31,618, and it stands. The case has been in the courts for 6 years.

Chaffee County.

Winfield Smelter.—The new matte smelter at Winfield is in operation.

Gilpin County.

(From Our Special Correspondent.)

Mining Deeds and Transfers.—W. H. Holmes to O. H. MacCauley of Denver, Mammoth lode, $500; lease and bond for 2 years in sum of $3,000 on Maggie & Etta claims, between J. Channing and Rocky Mountain Fuel Company, et al.; M. M. Jameson to H. K. McLeod and R. R. Nicholson of Ellis County, Kan., ¼ interest in Ella lode, $1,000; assignment of lease on Egyptian group from B. S. Phillips to Seven Stars Gold Mining Company.

Big Chief.—This group of 11 claims, near the Colorado Southern Railway, is owned by Milwaukee, Wis., men. Geo. W. Morgan is manager. The company is sinking a shaft and proposes spending $20,000 in development. E. R. Stillman, W. H. Tunlin, E. D. Coe, Otto A. Finck and W. J. Morgan of Milwaukee are directors in the company.

Central City.—This mine is worked by the Ross Gold Mining Company, made up of Pennsylvania capital. A contract let for 100 ft. of sinking will make the shaft 650 ft. deep. A new 40 H.P. hoist is to be installed. J. J. Reilley, Central City, is manager.

Concrete.—Sinking has begun in the Concrete No. 2 shaft, at a depth of 1,400 ft. A steady production is maintained. S. Newell, Central City, is manager.

Cook Mining Company.—During September this company shipped 3,350 tons of mill ore and 77 tons of smelting ore, a daily average of 114 tons. C. K. Colvin, Central City, is manager.

Crown Point & Virginia.—J. G. Berryhill of Des Moines, Ia., has taken hold, backed by a strong company. Two 80 H.P. boilers will be added to the plant, and the property is being unwatered under management of W. H. Knowles, Central City.

Drake Tunnel.—Cripple Creek parties are going to put in an iron compressor at once. E. Drake of Central City, is manager.

East Notaway.—Sheriff Mitchell and associates are putting this property in excellent shape. The mill ore runs from 30 oz. gold per cord up, and the smelting ore from $100 up to as high as $6,500 per ton. A deal is pending.

Georgiana.—Kelly & Canariem of Black Hawk have installed a small hoisting plant and built a new shaft house. The property is owned by Judge Munster and has been idle over 30 years.

Gilpin-Boston Gold Mining Company.—This company has begun sinking on a 50 ft. level. A small streak of high grade ore has been found. J. W. Hohnaw, Central City, is manager.

Kenyon.—This company has put up a small mill on North Clear Creek to treat gravel from the creek bed. The dirt is separated by a No. 8 revolving screen, and it is handled by Bartlett tables. Howard B. Kenyon is in charge.

Notaway Gold and Copper Mining Company.—This company has taken hold of the Aurora Mine, formerly owned by the Cuba Gold Mining Company. The shaft is about 450 ft. deep and is equipped with a fair plant of machinery. A. J. Vivian, Central City, is in charge.

Randolph Mill.—At this mill at Black Hawk a new flume 1,100 ft. long is to be built and the Randolph Mill Company is talking of tearing out one of the old 25-stamp sections and putting in a new one. George Mabee, Jr., Central City, is manager.

Reform Mill.—P. R. Hiatt of Apex has leased this mill on Silver Creek and is going to treat the ores from his Michigan Hill property.

Williams.—Lessees are shipping the mill product to the Renshaw Mill at Idaho Springs and get good results. The smelting ore averages over $100 per ton. E. Pulham, Central City, is manager.

Gunnison County.

Big Seven.—On this claim at Pitkin Park a deep shaft is to be sunk to find the ore caught by a diamond drill hole.

Sacramento.—This old mine in Gold Brick District is to resume work, Eastern men having taken a bond and lease on the property.

Hinsdale County.

Ute & Ulay.—The mill is being repaired. The mine is reported to have ore enough in sight to keep the mill running many months. A contract has been let for a 1,000 ft. cross-cut tunnel, to tap the vein 500 ft. below the present workings, and the contractors have the privilege of 2,000 ft. more.

Lake County—Leadville.

Breece Mining Company.—At the annual election in New York City, October 11th, the following directors were elected: C. L. E. de Gaugue, James H. Ahern, H. P. Chilton, S. J. Sullivan, E. H. Schley, Walter S. Gurnee, Jr., Willis A. Barnes. Willis A. Barnes was elected president and C. L. E. de Gaugue secretary and treasurer.

(From Our Special Correspondent.)

Leadville Ore Output.—Shipments now average about 2,150 tons of all kinds of ore per day. The increase is largely from the properties recently tapped by the railroads, and a heavier tonnage is promised in November.

Ballard.—Several new ore bodies have been opened up recently and 30 tons daily of ore averaging 3 to 4 oz. gold with silver and lead values are shipped. The shaft is down 450 ft., but the ore comes from the 415 ft. level. Excellent finds of bismuth are made and the stuff is sacked and shipped to London brokers. A streak runs 30% bismuth with about ½ oz. gold to each unit of bismuth. Several pockets went 40% bismuth and 80 oz. gold per ton.

Comstock Mining Company.—This Boston combination has its shaft on Breece Hill down about 300 ft.

Forest Queen Mining Company.—This company, the lessee of the Golden Eagle Company's property, has placed a fine plant of machinery on the Florence Claim, on Breece Hill, and will unwater the 250-ft. shaft.

Free American.—This proposition, below the Big Six, is operated by Thos. Gilroy, who in a new shaft has encountered ore at little depth and will ship from now on.

Golden Eagle Mining Company.—At the annual meeting J. H. Weddle was elected president, G. W. Skinner vice-president, W. W. Davis secretary, and C. T. Limberg treasurer, and with J. B. Grant, Albert Shaw and Chas. Cavender they constitute the board of directors. The company's ground is under lease.

Home Mining Company.—The Starr, Bon Air and Penrose are all outputting—the first two about 100 tons daily of iron and corbonates, and the latter 100 tons of rich carbonate ore with some iron.

Iron Silver Mining Company.—This New York combination is opening up new ore bodies and producing 200 tons per day of iron sulphides, which output will be increased when the concentrating mill at the Moyer Mine is refitted. Fourteen Wilfley tables are to be put in and will handle 100 tons daily of low-grade zinc-lead sulphides. The regular shipments of iron sulphides show about $1 to $5 to the ton gold, 10 to 20 oz. silver and a small fraction lead and zinc.

Louisville.—This property is in charge of Al. Wuensch. Sixty tons daily is the tonnage, 40 tons of which is lead ore and the rest zinc.

N. M.—Average shipments at present 30 tons per day. Jas. Tattersal is the financial agent of the company.

Penrose.—This property, worked by the Home Mining Company, is looking remarkably well. Beside opening up the large ore body, diamond drill work south of the shaft will ascertain the conditions below the limestone.

Union Smelter.—This plant, which has been entirely overhauled by the new owners, the American Smelting and Refining Company, is receiving ore and under the management of Mr. J. H. Weddle has blown in one stack.

Yak Mining, Milling and Tunneling Company.—The main tunnel is in 7,600 ft., and about 8 ft. a day is made. The tunnel, which runs from the rich silver section at the mouth of California Gulch, is heading for the Forest Queen, on top of Breece Hill. The present workings are 1,100 ft. from surface.

Larimer County.

Fort Collins Copper Mining Company.—Fort Collins men have formed this company to work the copper belt a few miles west of Fort Collins. The company owns 12 claims surrounding the Empire group, recently bonded to New York parties.

Mineral County.

Amethyst.—The Sullivan Drill Company of Chicago has a contract to drain this mine at Creede. Three holes will be bored by diamond drills—1 from the Nelson tunnel to tap the bottom of the Last Chance shaft, another from the 9th level of the Last Chance to the 10th level of the Amethyst, and a third from the 10½ level of the Last Chance to the 9th level of the Amethyst. The bottom of the Amethyst is 800 ft. above the Nelson tunnel, and only 40 ft. above the bottom of the Last Chance.

Pitkin County.

Smuggler Mining Company.—Warrants have been served on C. L. Hallett, manager of the Smuggler Mining Company, and W. J. Cox, superintendent of the Mollie Gibson and A. J. Mining companies, for the pollution of the waters of Roaring Fork by the concentrating mills of these companies.

Rio Grande County.

(From Our Special Correspondent.)

Iowa.—The tunnel on this property is being driven to develop South Mountain, especially the Golconda properties, at Summitville, is now in about 2,000 ft. The objective point is at a depth of 2,700 ft., where it is expected to intersect the Tewksbury vein. The developments are made under the direction of C. F. Palmer, superintendent. Lately ore containing a large percentage of copper has been found.

San Juan County.

Four Metals Mining Company.—This company, which recently purchased the Lackawanna group, is working 8 men, and proposes to build a concentrating mill at the foot of Swansea gulch next spring.

Iowa.—This mine shipped 900 tons of concentrates during September, the heaviest month's record in the history of the mine.

Excelsior.—This mine, on Boulder Mountain, has shipped 13 carloads of ore to the Durango smelter during the last few weeks, the ore carrying 39 per cent. lead and good values in gold and silver.

Red Mountain District. Shipments are about 11 carloads of ore weekly, 8 from the Congress, 2 from the Barstow, and 1 from the Enterprise.

Red & Bonita.—The mill will be ready for a test run in about 10 days. It will have a capacity of 60 tons per day, 200 tons being on the platform. Thirty men are breaking ore.

Sunnyside.—This mine is working 40 men on development. The mill has stopped, pending the construction of a pipe-line from the Animas river, 1 mile distant, which will be completed in about 3 weeks.

Silver Wing.—This mine, worked by the Elmira Mining and Milling Company, is now shipping 1 car of concentrates per day.

San Miguel County.

The ore shipments from Telluride for September amounted to 240 car-loads of crude ore and concentrates.

The Caribbean Mine is now shipping 5 cars per week, the Silver Belle 2 and the Butterfly 2. Six or 8 cars per week are coming from smaller mines, making the total output from the Ophir District from 15 to 17 cars per week.

Suffolk.—This mine at Ophir is now being worked by 20 men and 10 stamps are constantly dropping in the mill.

Summit.—The owners of this mine at Ophir have leased 20 stamps of the Suffolk Mill and will drive the tunnel 600 ft. further before beginning to take out ore in large quantities.

Sundown and Tenderfoot.—These mines of East Mancos are reported bonded to a Colorado Springs company for $110,000. A recent mill run of 100 tons is said to have cleaned up $2,136 on the plates.

Summit County.

Blue River Gold Excavating Company.—This company has started to sink a bed rock shaft 2 miles below Breckenridge. The hydraulic machinery is on the ground and is being put in.

Excelsior.—This mine at Frisco has begun breaking ore for the mill.

Iowa.—A giant is at work on this placer below Breckenridge, and the results are reported very satisfactory.

Teller County—Cripple Creek.

Strattons Independence.—During September the mine produced a gross tonnage of 3,023 tons, valued at $252,000. The average value per dry ton was $86.88, and the net profit for the month was $186,000, the best record the mine has ever made.

(From Our Special Correspondent.)

Ore shipments continue very heavy and there is some difficulty about a scarcity of cars. The launching of new mining companies continues with unabated zeal. Unlike the boom of 4 years ago, most of the new companies contain at least some good inside property.

Cripple Creek District Electric Railway.—This company has made arrangements with the La Bella Power Company for current. This will give the road more power. The power has been furnished by the local electric light company.

Free Coinage Gold Mining Company.—This company on Bull Hill is erecting a new ore house. Considerable good ore is being taken out.

Grafton Gold Mining Company.—This company has entered the list of dividend payers with a distribution of $10,000. The company owns the Hoosier Mine on Tenderfoot Hill, which is worked by lessee Anstee. It is understood that the output is about $75,000 worth of ore per month.

Standard Tunnel.—Another and much larger flow of water has been encountered and work has completely stopped for the present. It is rumored that very good ore was found just before the water was struck on the Black Bell ground, but this cannot be verified.

Tornado Gold Mining Company.—A recent report shows the following shipments for the week ending October 7th; 30 tons at 9.61 oz. per ton; 18 tons at 3.2 oz. per ton; 28 tons at 1.77 oz. per ton; 23 tons at 1.08 per ton. A number of the levels of the Elkton have been driven to the Tornado line and show good ore. From all accounts the property is destined to become very valuable.

Victor Gold Mining Company.—The contractors have finished sinking and are now cutting the station at the 14th level preparatory to running drifts. This mine for the past month or so has done nothing except sinking.

## GEORGIA.

### Cobb County.

Acworth Mining and Development Company.—This company, in which Nashville and Chattanooga, Tenn., men are interested, proposes to develop a gold property on which some work has been done, by M. T. Freeman, of Chattanooga. The property is in the Georgia gold belt and comprises 160 acres. It is on the line of the Western & Atlantic railway, 193 miles south of Chattanooga.

### Hall County.

McClesky.—This mine is now in charge of Mr. H. D. Jaquish, and development work there is progressing rapidly.

### Lumpkin County.

A great many tribute miners are now on the standstill for lack of water, caused by the unusually dry weather, says the Dahlonega "Nugget." This has also retarded quartz mining to some extent, excepting where the water is conveyed to the mines through ditches, canals or other special means.

Hand.—At this mine, near Dahlonega, a tunnel is to be run several hundred feet into the hill. It is expected to cut several well known veins, including the McAfee, the Knight and the Breyman.

## IDAHO.

### Idaho County.

Buffalo Hump Tunnel Company.—This Spokane company has had a 4-drill compresser, 2 machine drills, pipe and boiler shipped to Lewiston and the machinery will soon be installed on the Orizaba claim in Buffalo Hump.

### Lemhi County.

Black Bird District.—Some good deposits of copper ore are reported to exist in this district along Big Deer Creek. A group of claims showing a large outcrop is owned by Messrs. J. P. Clough and James Sims.

Gold and Copper Exploration Company. This Boston company, in which Dr. P. A. H. Franklin is interested, has taken bonds on 5 groups of copper claims in Black Bird District; 1 group, on Brown Bear Creek, is owned by Dr. Wright and others; another group, the Uncle Sam, is owned by J. O. Swift of Hailey and R. S. McCornick of Salt Lake. The ores are reported to run in copper, gold and silver.

### Owyhee County.

Gold Rock Mining Company.—This company has run a 750 ft, tunnel on its group, comprising the Mammoth and other claims in Blue Gulch, near Silver City. A drift is being run on the Mammoth vein.

Sinker Tunnel.—It is stated that work on this long-debated project near Silver City will begin this fall. The tunnel will start on the east slope of War Eagle Mountain, about 500 ft. above South Sinker Creek, and 5,200 ft. above sea level. In 6,300 ft. it will be under the Chariot ledge, its present objective point, and considerably below the old workings. Just before reaching the Chariot the tunnel will cross the Cumberland, Mountain Chief and other locations. Beyond the Chariot, the Red Jacket, Dernier Resort, San Juan, Stormy Hill, War Eagle, Empire, Poorman and noted properties will be encountered. Frederick Irwin, superintendent of the Black Jack mines, will have charge of the tunnel company. Arrangements have been made for 3 boilers and the compressor plant at the Oro Fino hoist.

### Shoshone County.

Federal Troops to Remain.—Secretary Root recently issued an order providing for the withdrawal of Federal troops from the Coeur d'Alene district. On October 18th Governor Frank Steunenberg, and Judge W. E. Borah called on Secretary Root and Adjt.-Gen. Corbin in Washington and protested against the proposed action on the ground that the State did not have enough troops to maintain order and needed the assistance of the United States military authorities. Secretary Root consented to allow United States troops to remain to protect life and property, and issued an order suspending the execution of that previously issued.

Panhandle Mining Company.—This company proposes to work the Panhandle group of 6 claims in Nine Mile gulch, 3 miles from Wallace. The company's office will be in Wardner, and its officers are: President, A. Burch; Secretary, C. H. Wentz; Treasurer, G. W. Harris. The company is stocked for 1,000,000 shares of a par value of 10c. The development consists of a tunnel in 800 ft. with a winze sunk 60 ft. which is 360 ft. from the tunnel mouth. The vein is said to show $12 silver and 40% lead and is 5 ft. wide or more.

### Washington County—Seven Devils District.

(From Our Special Correspondent.)

The United Copper Company, of Boston, is starting development work on its property under the supervision of C. F. Hathaway, with M. M. Ketchum as superintendent. A shaft is sinking on the Buffalo No. 3, where it is following a small vein of high-grade copper glance. Work has started on a 400-ft. tunnel to open the contact at depth, a much-to-be-desired undertaking. On the Columbia claims a good body of 12% ore is opened in a 50-ft. shaft, and a compressor plant has been ordered to run in a 400-ft. tunnel, to cut the vein at 300 ft.

The North West Copper Company, New York, continues development work on the Peacock, having taken out during the past 2 months some 600 tons of ore which may average 18%, and is also pushing work on the Iron Dyke, and the No. 2 tunnel has opened up very large bodies of pyritic ore. The smelter foundations are laid and the roasting bins completed.

The southern end of the region—the Heath District—is showing life. H. D. Andrews has bonded the Ruth for Salt Lake parties for $20,000, and contracted for 200 ft. of tunnel.

Mr. Brown, of the Pacific & Idaho Northern Railway, has bonded the Queen & Climax for $30,000 and begun work on a 6 by 8 shaft.

The Ruthberg Consolidated Copper Company, of Providence, R. I., has started a tunnel to develop the What Cheer group, and report an excellent showing.

## INDIAN TERRITORY.

Coal Production.—The annual report of John W. Fleming, United States Coal Mine Inspector for the Territory, states that during the fiscal year ended June 30th, 1899, there were employed in and about the mines of the Territory 1,507 miners, 44 boys and 329 day men, making a total of 1,880 employees.

The production of coal for the fiscal year was 1,049,034 tons, which was an increase of 190,451 tons over the total production of the previous fiscal year. The total estimated value of the product is $1,600,588. There were reported 25 mines in operation, 5 more than during the fiscal year previous. The output of coal comes practically from 4 counties. During the fiscal year there were reported to the mine inspector 15 fatal accident, the causes of which were: By cars, 3; by electric wires, 1; by fall of slate, 2; by smothering, 1; by gas explosion, 5; by fall of rock, 3. The coal trade was very brisk during the year, and the demand for the coal produced in the territory was much greater than the supply. At Madrid and Blossburg the companies could not fill more than 2/3 of orders received, partly on account of not having the mines developed, but mostly on account of scarcity of miners, owing to labor troubles. Otherwise, the production would have been many tons greater.

## KANSAS.

Coal Miners' Strike.—The strike of the miners in the coal fields about Leavenworth ended recently in a compromise between the miners and the operators. The price for mining was fixed at 76c. per short ton, and 8 hours will be a day's work, an increase of 4c. per ton. The miners asked 80c. All the mines are resuming work.

## MICHIGAN.

### Copper.

Belt.—This property, near Rockland, is under option to Peter White of Marquette, Don M. Dickinson of Detroit and others. Of the 4 old shafts on the property those on the Butler and Knowlton amygdaloid lodes have been unwatered. The shaft in the Butler is down 360 ft., and is being retimbered. It is about 8 by 10 ft. The Knowlton shaft is not down quite as deep as the Butler. The latter is provided with a small hoist and rock house. There is a high-speed engine, 2 rock crushers and a compressor capable of running 32 drills. The stamp mill is built for 3 heads of Ball's stamps, though 1 head only has been erected. An engine and boiler are part of the equipment, and a large pump is in place. Five veins of the Evergreen range pass through the property, but only 3 have been opened at all.

Meadow.—At this old exploration west of the Humboldt in Keweenaw County, at which work was done as long ago as 1851, the old workings on a fissure vein are being opened again and a double skipway on an ashbed vein is now down 190 ft. At the first level a drift has been run east 110 ft., and one west 102 ft. An 8-drill compressor and steam hoist have been installed. The Meadow Mining Company owns 350 acres of land. About 20 men are at work under Capt. Morgan.

Wolverine.—At this property, back of Hancock, a new duplex hoisting engine, built by the E. P. Allis Company, of Milwaukee, is in commission at No. 3 shaft. It has 24 by 60 in. cylinders and a drum 16 ft. in diameter. A 2-ton skip is in commission, but will be replaced by a heavier one. At No. 4 shaft a duplex hoist with 24 by 48 in. cylinders is in commission. There is a 30-drill Rand compressor, and another compressor in reserve. The Wolverine Mining Company owns the mineral right of 280 acres of land. The Kearsage lode has a dip of 42° and an average width of 15 ft. A number of other lodes cross the Wolverine property that may, and doubtless will, be fully explored and developed by the company.

### Iron—Marquette Range.

Champion.—On October 11th Capt. Simon Kinsman and Superintendent Walter Fitch were riding on the skip up No. 5 shaft of this mine at Champion, when a piece of broken pipe lying across the shaft near the 2d level threw the skip from the rails. Capt. Kinsman was hurled from the skip and fell to the bottom of the shaft, a distance of nearly 800 ft. His body was horribly mangled, and life had left it before it reached the bottom of the shaft. Superintendent Fitch escaped a fall. Capt. Kinsman had been a resident of Marquette County over 30 years, and most of that time was at Champion.

### Iron—Menominee Range.

(From Our Special Correspondent.)

Columbia Mine.—This mine at Crystal Falls now looks better than at any time in its history. From the 6th level a drift east has opened a new lense of good ore running 62 to 64% iron and lower in phosphorus than the rest of the mine. A new body has also been found on the south of the old mine.

Crystal Falls District.—The American Steel and Wire Company recently took 2 properties for examination in one day. The Oliver Mining Company has secured the Hope and the May, about 1 mile south of Crystal Falls, and is exploring there. Between these and apparently carrying the ore body for ¾ of a mile is a property that has been tied up under a 20-year lease by Duluth men. Ogalbay, Norton & Company have taken several properties near Crystal Falls and are at work. Pickands, Mather & Company are also exploring. Corrigan, McKinney & Company, who some years ago took the Crystal Falls and this year the Lincoln, Lamont and Great Western, have taken more ground and will examine it. The company is shipping about 3,000 tons a day from its mines close to the village and expects to make all-rail shipments this winter. Ore is now going by rail to Chicago and the Mahoning Valley, the latter via the car ferries across Lake Michigan and the Hocking Valley line.

Explorations.—In section 13, near Crystal Falls, on 40 acres test pits have shown up what may prove to be excellent ore. The ore comes close to the surface. In section 27 several pits show ore covered by 4 to 15 ft. of sand. There are 200 acres of the lease, and the formation runs clear across it. Some 1,000 acres south of the Mansfield are to be explored, the indications being favorable.

Men are very scarce on the range and get $2 a day easily.

Mansfield Mine.—The lower level is 230 ft. in ore about 16 ft. wide.

## MINNESOTA.

(From Our Special Correspondent.)

The Carnegie company has contracted for 5 ships to carry 800,000 tons a season, and has 6 boats of about 350,000 tons. The company has traffic for some 3,000,000 tons above its Rockefeller tonnage agreements. The Rockefeller company, having a long time contract with the Carnegie company for a large tonnage yearly, the rate to be fixed at the "going price" each year, was determined to have ships enough another season and to make the "going rates" for 1900 high enough to give a good round profit on the Carnegie contract. So it secured the 30 ships with a seasonal capacity of 1,800,000 tons of the American Steel Barge Company, paying about $119 per share for the stock. This stock sold freely a year ago at $55 a share. It also contracted for 10 more ships of the 7,500 ton class,

now building, and will next year add these to its 27 ships and the Steel Barge fleet of whalebacks, giving a total of 67 vessels, with a seasonal capacity of 5,000,000 tons, or nearly 1/3 of all the iron ore carried down the Great Lakes this year. The American Steel and Wire Company is building ships to carry all its ore, these being 48,000 ton vessels in addition to the Zenith fleet brought early in the season. The Minnesota Iron Company is adding to its fleet enough ships to carry another year of not far from 2,500,000 tons.

Iron—Mesabi Range.

(From Our Special Correspondent.)

Adams.—This property at Eveleth is expected to be enlarged by at least 1 new shaft for the coming year.

Commodore Mining Company.—This Virginia mine is shipping about 1,200 tons daily to Cleveland furnaces, of excellent quality. It will stockpile heavily this winter.

Franklin Iron Company.—All ore raised at this Virginia group, belonging to the Republic Iron and Steel Company, is shipped, and the stocks won earlier in the season will be shipped soon, if freights permit.

Spruce Mining Company.—This company, formed by P. L. Kimberley and associates to open the Eveleth townsite, is beginning work. Capt. Cowing, late of the Savoy Mine, will be captain, and the mine will be worked underground by the square set system. Wallace Kimberley will be in charge. A shaft has started and considerable ore will be stocked during the winter. There are 75 ft. of surface over the ore, and the mine is wet, but its ore is practically all Bessemer of good condition physically. There are known to be some 7,000,000 tons in the deposit, which belongs in fee to the men that own the Adams and parts of the Fayal.

Iron—Vermilion Range.

(From Our Special Correspondent.)

Mahoning Ore and Steel Company.—This company has secured a property in section 15, T. 62, R. 14, between Tower and the Oliver's new possession. It will be explored the coming winter and is hoped to become a small shipper another year.

Oliver Iron Mining Company.—This company has secured possession of a new property in section 5, T. 62, R. 14, 10 miles northeast of Tower. It is under a 25c. lease and a 100,000 ton minimum output, and the fee is held by John Semer of Escanaba, Mich. A shaft sunk 75 ft. and drill work on the property has shown a large body of ore.

Robinson Explorations.—Work has been suspended while Mr. Robinson secures machinery for the winter. Drill work has finished and is reported to show a good body of ore.

Savoy Mine.—This mine has stopped shipments and is stockpiling its hoist. The mine's entire stockpile of last year has not been shipped, and may not be on account of the present freight rates.

MISSOURI.

Jasper County.

(From Our Special Correspondent.)

Joplin Ore Market.—There is practically no change in the situation, and last week's prices prevailed. Top grade zinc ore sold at $43.50 per ton, and lead was steady at $27 per 1,000 lbs. Fully 90% of the mills in the district are shut down and will remain shut until the Association orders a resumption. The buyers bought everything in sight at Association prices. Over 700 tons of this week's sales were bought the previous week, and a great portion of the balance reported in the sales was surplus ore. There is now no ore in the district. As compared with the corresponding week last year the sales were less by 2,617,120 lbs. of zinc and 239,232 lbs. of lead, but the value was only $8,006 less, as last year top grade zinc ore was selling at $34 per ton and lead brought $22 per 1,000 lbs. For the corresponding 41 weeks last year the lead sales were greater by 5,220,252 lbs., but the zinc sales were less by 58,851,170 lbs. and the value was less by $3,746,197. As compared with the previous week the sales were less by 1,127,250 lbs. of zinc and 170,862 lbs. of lead, and the value was less by $16,275. Following is the turn-in by camps:

| | Zinc, lbs. | Lead, lbs. | Value. |
|---|---|---|---|
| Joplin | 1,277,380 | 192,040 | $32,010 |
| Webb City | 640,920 | 80,920 | 15,644 |
| Webb City | 345,710 | 15,770 | 7,340 |
| Belleville | 162,700 | 6,700 | 3,598 |
| Oronogo | 857,310 | ..... | 18,149 |
| Duenweg | 44,500 | 78,600 | 3,012 |
| Lehigh | 48,010 | 2,230 | 1,067 |
| Central City | 141,200 | 6,670 | 2,791 |
| Stotts City | 254,160 | ..... | 5,337 |
| Galena-Empire | 1,570,690 | 156,390 | 33,281 |
| South Jackson | 75,600 | ..... | 1,398 |
| Cave Springs | 113,280 | ..... | 2,096 |
| Granby | 264,000 | 21,000 | 4,700 |
| Wentworth | 44,200 | ..... | 884 |
| Alba | 50,810 | ..... | 1,067 |
| Hells Neck | ..... | 28,860 | 579 |
| Aurora | 855,000 | 15,000 | 12,990 |
| Dade County | 128,740 | ..... | 2,060 |
| Barry County | 42,560 | ..... | 456 |
| Total for week.. | 6,916,770 | 604,108 | $148,459 |
| Total 41 weeks.... | 406,680,720 | 37,715,098 | $8,928,930 |

It is not believed that the shut down will continue longer than another week. Some of the smelting concerns are running their furnaces and continue to buy all the ore they can get, among these being the Edgar interests and the Midland Smelter at Bruce, Kan. There is too much capital invested in this district to make it probable that the smelter men will again dominate the ore markets as in the past.

Mining Land Sales.—Era Rose has sold 5 acres of his land 3 miles southeast of Joplin to Eastern parties for $1,000. The new owners will put on a drill at once. The old Rabbit's Foot tract, consisting of the fee of 40 acres of the Joiner farm near Central City, has again been sold by E. Hedburg & Company to Mr. Gossett of Kansas City as attorney for Eastern parties for $50,000. M. W. Van Fleet of Cripple Creek, Colo., has also bought through the same agency the Dubbins trailing mill on the old Standard Hill lease at Belleville for $4,000. V. L. & S. J. Chester of Carthage have purchased a ½ interest in the Buff Cochin Mine on the Cornfield at Carterville for $8,000. The Bruce Mining and Smelting Company, which recently purchased the Pearl C. at Webb City, has incorporated for $400,000. Andrew Case and James Marsh of Boston, representing Colley & Company, have been in the city for several days looking over the route of the proposed electric line for which they are asking a franchise.

Philadelphia Zinc and Lead Mining Company.—This company, recently incorporated under New Jersey laws, with a capital stock of $3,000,000, according to its prospectus owns in fee 6,075 acres of land in the Joplin District. The company will issue at present $1,000,000 of its capital stock. The balance, $2,000,000, will remain in the treasury for working capital and to acquire other properties. The prospectus makes some rather wild claims about the prospective output of the Joplin zinc mines. The officers and directors are: President, Charles D. Cramp, Philadelphia; vice-president, R. M. Hunter, Philadelphia; secretary and treasurer, Edwin Shapley. Directors, Nathaniel B. Crenshaw, Philadelphia; Charles D. Cramp, R. M. Hunter, Louis A. Levin, Edwin Shapley, Frank Sheridan, John Williams, Philadelphia; general manager, George O. Angell, Philadelphia; assistant general manager and resident engineer, Clay Gregory, Joplin, Mo.

United Zinc and Lead Company.—This Chitwood Mining Land Company, Rinker Lead and Zinc Company and the Leonard Land, in all owning about 1,000 acres of zinc and lead land in the Joplin District, have been consolidated and will be known as the United Zinc Companies. The head office will be in Boston, Mass. The authorized issue of stock consists of 8% cumulative preferred, treasury stock amounting to $1,000,000, and common stock amounting to $5,000,000. W. L. Lowell of Newton, Mass.; G. M. Foster of Peabody, Mass.; E. A. Phippen, Col. Levi R. Greene, Sidney Harwood, John W. Dickinson, Franklin Playter, Hezekiah G. Chase, W. M. Mick, E. E. Parker, J. O. Curry and H. P. Stimson of Boston, are interested in the company.

MONTANA.

Beaverhead County.

(From Our Special Correspondent.)

Bannack Dredge Company.—Perhaps the most successful gold dredge on Grasshopper Creek is the "A. F. Graeter," built in 1897 and rebuilt in 1898. Its capacity is 2,300 cu. yd in 24 hours, and this season, which ends about November 15th, it will handle 500,000 yd. Up to October 6th it had been idle but one shift since this season. There are 36 buckets, each 5 cu. ft. capacity, and 9 to 10 buckets discharge in a minute. It can dig 37 ft. below water level, and a bank 36 ft. above the water line has been successfully handled. This season's run is on the Pioneer Company ground 1 mile below Bannack. The gravel averages about 20c. a yard. R. W. Christian is superintendent.

Gold Dredge Company.—Close to Bannack is the "Fielding L. Graves" dredge, worked by electric power, generated by water supplied by an old mining ditch. This company and the Bannack are practically under the same ownership and management. There are 2 other boats on Grasshopper, 1 operated by the Bonaccord Dredging Company, 3 miles below Bannack, and the other by the Coast Dredging Company, 1 mile farther down the creek. All report a successful season.

Flathead County.

Snowshoe.—This mine near Libby is owned by an English company. The longest tunnel is in over 1,600 ft. and is being driven 8 ft. a day. The company has an 11-drill Rand compressor and is to put in a hoist to sink to the 500 ft. level from the long tunnel. The concentrator has a capacity of 150 tons of ore every 24 hours, and the ore is said to run about $60 to the ton. The vein is almost perpendicular and from 5 to 14 ft. wide. The company owns or has under bond 5½ miles of the ledge. At present surveys are being made to control the water in the district surrounding the mine, and the company may put in a larger concentrator next year. About 125 men are employed.

Granite County.

Majestic Mining Company.—This company's property at Quigley is now controlled by Arthur Coburn of Philadelphia, who bid in the property for $24,759 when it was put up at sheriff's sale recently. This sale wiped out all claims against the property, amounting to over $400,000. It is possible that the plant will be dismantled and the machinery sold.

Montana & Denver.—The new reduction plant at Garnet is nearly completed. It will handle the low grade Garnet and Coloma ores and do a custom business.

Madison County.

Utah & Nevada Exploration and Mining Company.—This company is developing the Madisonian mine with F. B. and R. B. Turner as managers. The old shaft is down 300 ft., and a new shaft is going down on an extension of the Madisonian lode. The mill will be of about 60 tons capacity and is on the Colorado plan. The mill will be dry crushing with rolls, cyanide, and concentrates. The plant will be ready to run about November 1st. The company has about 30 men working in the mine, and 25 on the mill. About 3,000 tons of tailings have been run through cyanide tanks erected on the site of the old mill.

Silver Bow County.

Butte & Boston.—According to the Anaconda "Standard" the surface plant at the Grayrock mine is one of the neatest and most compact in the Butte District. The West Greyrock, adjoining, is down 700 ft., and is worked partly by the company and partly by lessees. The Greyrock proper is down 1,600 ft. The hoist is equipped with an engine built by the Chicago Iron Works, said to be capable of working up to about 450 H.P. The boiler plant consists of 4 sets of 60 H.P. boilers, mostly of the Fraser & Chalmers pattern. There is also a Fraser & Chalmers air compressor of about 150 H.P., with Nordberg gearing. A little 25 H.P. engine runs the machine ship and saws. The ore is hoisted with double deck cages to an elevated platform about 12 ft. above the collar of the shaft, whence it runs by hand cars to the dump. The track is double and housed in all the way to the dump, about 200 ft. The waste passes on to the great waste dump. The copper water from mine is not saved. It is said to be fairly rich, but the quantity is small. About 130 men are employed.

NEW JERSEY.

Morris County.

Hibernia.—The magnetic concentrating plant at lower Hibernia is in operation. About 30,000 tons of crude ore are at the works and about 100,000 tons more at upper Hibernia.

NEW MEXICO.

Rio Arriba County.

St. Anthony Crystal Mica Company.—Colorado Springs men, including W. S. Stratton, A. A. Doyle, Judge Colburn and others, are reported to be interested in this company, which now controls a tract of 5,000 acres of land said to contain valuable deposits of mica. The land formerly belonged to M. Z. Farwell of La Junta, and the price is said to have been $50,000.

NORTH CAROLINA.

Cabarrus County.

(From Our Special Correspondent.)

Black Cat.—This mine, near the Mecklenburg County line, has struck a body of high grade copper ore in addition to its gold ore. Samples run very high. Some of the gold ore milled $15 per ton. It has 150 tons on dump and has purchased a 10-stamp mill of the Mecklenburg Iron Works of Charlotte.

Reed.—This mine shut down its 10-stamp mill to accumulate ore in advance. The ore is low grade, but pays.

Granville County.

(From Our Special Correspondent.)

Blue Wing.—These copper mines, near the Virginia line, continue to ship weekly several carloads of ore. They are reported as paying well.

Stanly County.

(From Our Special Correspondent.)

Parker.—This gold mine is opening new ore deposits under the management of Richard Eames, Jr. Several thousand tons of low grade material are in sight and several fine nuggets have been turned out.

PENNSYLVANIA.

Anthracite Coal.

Shenandoah Colliery.—At this colliery near Pottsville on October 17th an explosion of gas in a gangway 1,200 ft. from surface, due to a fall of coal, horribly burned 10 miners, 3 of them fatally.

SOUTH DAKOTA.

Custer County.

(From Our Special Correspondent.)

Drummer Group.—Two small shafts have been sunk and two veins, 3½ and 4 ft. thick have been found. The ore is becoming more refractory. A. L. Kern, of Milwaukee, is one of the chief owners.

Duchess.—A new steam hoist has been ordered and work has been suspended until it arrives.

Lawrence County.

(From Our Special Correspondent.)

American Mining Company.—This company, in the Ragged Top District, has decided to run a tunnel from the Spearfish Canyon to strike the diamond hole in the Dacy shaft, and is planning to erect some sort of an ore treating plant in the canyon. This company has begun laying out a town site in the canyon. The Burlington Railway Company has begun a road from Dumont to the canyon by a new route, and many buildings from Ragged Top will be moved to the new town. The company continues to bond new ground.

Belle Eldredge.—Isaac Downing has leased this mine in Spruce Gulch of the owners, Aaron Dunn and associates, and is shipping ore.

British-American Mining Company. — This company has struck ore in its shaft on Butcher Gulch at 100 ft., said to assay from $6 to $22 per ton.

Dakota Mining Company.—This company has begun hauling ore from the Jack Pot Mine, in Portland Mining District, to the new cyanide plant at Central City. The mill will have a capacity of about 40 tons per day.

Galena Mining and Smelting Company.—This company now has 30 men developing the Alert and Hoodoo mines in Galena District.

Garden City District.—Burns & Little are taking out ore from their claim. Men are at work in the Penobscot Mine. R. M. Maloney, owner, intends to treat the ore in the cyanide plant at the Deadbroke Mine.

Hailstorm.—Frank Voix and Charles Witzell are taking out good ore from the Hailstorm Mine, in Two Bit District, and are making regular shipments.

Hidden Treasure.—Mr. Grantz plans to mine all the ore he can this winter at his claim at North Lead and develop the vein thoroughly, and has abandoned for the present the erection of a stamp mill.

Ironsides.—C. E. Stubbs of Colorado Springs, Colo., who is superintending development work on this mine in Carbonate Camp, has some samples of sylvanite ore from the drift which is being run. A steam plant will be installed.

Kicking Horse.—D. W. Campbell, of Chicago, and associates have leased the cyanide plant in Deadwood and will begin work immediately in the mine at the head of Blacktail Gulch. Air drills will be put in and about 60 men employed at the mine and mill. The cyanide plant is owned by the Black Hills Gold and Silver Extraction Company, controlled by the Rossiter Brothers, and it has a capacity of 75 tons per day. Custom ore will be bought, enough to keep the plant running full capacity.

Modoc.—This group is in the Polo Creek District, and is owned by Henry Bressett, Barney Franklin, O. Matson, W. L. Faust and others. A hoist is being erected.

Portland Mining Company. The officers of this company have been looking over their properties in the Portland mining district, which have been shut down on account of the raise in price of treating ore at the Golden Reward smelter. G. M. Curtis is president, A. R. Olney treasurer, and H. W. Seaman secretary, all of Clinton, Ia.

Titanic Mining Company.—This company is sinking a shaft on the north end of a large tract of ground in Carbonate Camp. The shaft may be sunk to quartzite.

Pennington County.

(From Our Special Correspondent.)

Golden Slipper.—The shaft, 4 miles east of Hill City, under bond to Milt Pinney, is being sunk deeper. The J. R. stamp mill is being fitted up and the ore on the dump will be run through. The vein averages 4 ft. wide at the 200 ft. level.

Mystic.—F. H. Long of Chicago has purchased 5 acres of ground near Mystic, and let the contract for a 100 ton plant using an electric cyanide process. Work has begun on the building, which will be at the junction of the Burlington and the new railroad from Rapid City.

Poisoned Ox.—A. D. Arundel of Minneapolis, who has been working the Lena Mine at Hill City, has bought the Poisoned Ox and Copper Glance claims near Pactola, with a water right on Rapid Creek, and may erect a concentrating plant.

Sunbeam.—Hawk Wright is taking out some rich free milling ore from a 70 ft. shaft in Friday Gulch.

TENNESSEE.

Hamilton County.

Douglas Coal and Coke Company.—Joseph H. Hoffecker of Wilmington, Del., and New York and Delaware capitalists have, it is stated, bought 14,000 acres of coal, iron and timber lands in the Cumberland Mountains near Chattanooga, and will immediately develop the lands. This company has been chartered under the laws of Delaware, with a capital stock of $500,000. The company may build several hundred coke ovens at once. John S. Hoffecker of New York City has been made manager of the company, and will be located at Chattanooga.

UTAH.

(From Our Special Correspondent.)

Bullion and Ore Shipments.—During the week ending October 14th there were sent forward from the several smelters 18 cars, or 732,956 lbs., lead-silver bullion; 5 cars, or 259,812 lbs., pig copper. In the same week there were shipped from different camps 67 cars, or 3,076,565 lbs., ore for treatment at smelters outside the State.

Germania Smelter.—Another large stack has begun work, known as No. 5, replacing a small furnace of that number; 4 large stacks and 1 small one are in commission. The Mingo has 2 large stacks in blast, making 7 in commission at the trust smelteries. Ore supply is at high water mark.

Taylor & Brunton Sampler.—A new plant, capable of handling 50 tons of ore an hour, is being built next to the present sampler south of Salt Lake City. Mr. D. W. Brunton says he hopes to see it in commission in 4 months.

Grand County.

(From Our Special Correspondent.)

Big Indian.—The option on this group has expired and the owners are to advance exploration. Manager Skewes has gone to Salt Lake where, at the Tintic, he has made experiments at recovering the copper from this sandstone. The Big Indian is regarded as one of the best properties in La Salt.

Iron County.

(From Our Special Correspondent.)

Johnnie.—A shipment of high grade is just being sent to Salt Lake which Superintendent C. O. Newell expects to run close to $2,000 per ton. The shaft, 75 ft. down, is in solid ore. All rock save the high grade goes to the mill. The property is owned by Dooley Brothers.

Ophir.—Development consists of an incline shaft 200 ft. with 500 ft. of drifts on an east and west vein. Mr. G. W. Keel says it has the surface indications of a big mine. There are 6 claims in process of patenting by the Ophir Mining and Milling Company.

Juab County.

(From Our Special Correspondent.)

Tintic Shipments.—In the week ending October 14th there were forwarded from the 3 shipping points of the district 66 cars of ore, 3 cars of concentrates and 2 bars of bullion. The ore is to be credited: Mammoth, 15 cars; Gemini, 11 cars; Swansea, 6 cars; Humbug & Uncle Sam, 5 cars; South Swansea, 4 cars; Godiva, 3 cars; Sunbeam, lease, 3 cars; Four Aces, 2 cars; Grand Central, Spy and Star Consolidated, each 1 car; Tintic Iron, 14 cars hematite for flux. Mammoth sent out 3 cars of concentrates and Sioux Mills 2 bars of bullion.

Centennial-Eureka.—Managing Director Holden has returned from the East and will visit the property October 18th. The new Centennial-Eureka Mining Company is incorporated under the laws of Maine, with 200,000 shares, par $25, of which 100,000 are set apart for treasury needs. E. A. Clark is president; C. H. Cole, Jr., treasurer; F. W. Bachelder, secretary, and C. E. Allen continues as general superintendent. The shares will be listed on the Boston Exchange about the middle of November. The ledge is just cut on 700-level.

Grand Central.—A suit is brought in the District Court by the administrator of the estate of Timothy Kelly for an undivided ½ of the King William and Wedgewood claims, owned ½ by the Grand Central Mining Company and ½ by C. H. Blanchard and J. H. Rouse. H. S. Joseph and H. M. McCartney join the plaintiff in the suit. For ½ of King William $100,000 is sued for, and a separate action is to be brought for the Wedgewood. In effect this action is said not to concern the Grand Central except in a nominal way, as it is a contest between co-partners and former owners.

Salt Lake County.

(From Our Special Correspondent.)

Preliminary steps for a Government geological survey of Bingham are instituted, but it is not probable that the Bingham folio will be issued before 1905.

Bingham Copper and Gold.—An 8 in. seam of high grade copper rock is cut by crosscut tunnel 590 ft. in, said to carry 35% copper, 32% gold and 55 oz. silver, the richest thus far opened. On October 12th the tunnel from Bayly Gulch was in 685 ft. and it expected to cut the ledge in 220 ft. more.

Dalton & Lark.—The main incline is to be driven to 1,000 ft. station and south drift on 800 ft. level is to be driven 100 ft. A car-load shipment returned 5.6% copper, 58.2 oz. silver, 5.8% lead and excess of iron; another, 7.9% copper, 15 oz. silver 18% lead. The fate of the Whittemore option will not be known till next week.

Morning Star Group.—J. S. Kennedy has secured the Allen bond on this ground, which joins Utah Consolidated territory on the southwest. Exploration is to be pushed. A vein is opened carrying copper, lead, silver and gold. Prior report that A. E. Reynolds of Denver had this ground tied up was premature.

United States.—A good flow of water was cut recently, one of the needs of the company. Exploration is advanced by 11 power drills—in September there were 1,664 ft. of new development driven.

Summit County.

(From Our Special Correspondent.)

Anchor.—No shipments of concentrates were made this week. The transfer from the old to the new mill is in progress.

Daly-West. — The Guggenheim Exploration Company will swing affairs hereafter, having secured the rest of the Haggin-Hearst holdings at something above $13 per share. The deal was engineered by Messrs. J. E. Bamberger, W. S. McCornick and David Keith. Mr. Bamberger is the Guggenheim representative in this field. It is said that over 80,000 shares of the 150,000 are involved in the transfer. At present Daly-West ores are sold to the smelter trust.

Park City Shipments.—For the week ending October 14th the smelter products marketed through the Mackintosh Sampler aggregated 3,449,715 lbs., composed as follows: Silver King, crude 1,063,235 lbs., concentrates 379,810 lbs.; Ontario, crude 1,278,950 lbs.; Daly-West, crude 727,720 lbs. Stormy weather and deep snow curtailed the output.

Silver King.—The company on October 14th consummated the purchase of Massachusetts ground, some 17 claims, of J. H. Conrad. Local papers place the price at $150,000 and $600,000, but it is below the smaller figure. Reports of an option on Silver King for $9,000,000 by the Guggenheims lack foundation. No examination relating to a sale has been made, and the officers say they have no idea of disposing of the property.

Tooele County.

(From Our Special Correspondent.)

Daisy.—Arthur Murphy retires from the management and is succeeded by Chan Gardanier, a large shareholder. The new elevator will soon be running, and larger tonnage may be put through.

De La Mar.—Including refining the mill product at home—a saving of 35c. per oz. gold—other recent economies have decreased the mill's expenses about $6,000 per month. The equipment will not be complete until December, when the capacity will easily be 900 tons daily.

Geyser-Marion.—Thus far recent exploration has failed to open the looked for ore bodies.

La Cigale.—Manager MacKay states that his company proposes to spend $60,000 in a roasting annex and other mill betterments soon.

Mercur.—Nothing has been done towards equipping the cyaniding plant to win gold from the rebellious ores, but matters stand as this time last year. The present enlargement at the mill is simply increased tankage to handle 600 tons of free cyaniding mineral daily. Meanwhile the higher grade base ores are left unmined.

Northern Light.—There are intimations of a new uncovering of high grade ore. At the property nothing can be gleaned, but there is a sudden inside demand for the shares.

Salt Lake & Mercur Railroad.—The equipment is to be increased by 6 steel ore cars, furnished by the Lima Locomotive and Machine Company, and a 50-ton Shay locomotive. Including these additions there will be 5 locomotives and 14 ore cars.

Sunshine.—It is announced that a test run is to be made in the Overland Mill.

Uintah County.

(From Our Special Correspondent.)

Summit Smelter.—The 40-ton copper smeltery will probably be in commission soon. This plant is to treat the Dyer ore and is the only smelter in this county. Some accounts speak of the Summit and Dyer smelters as 2 separate plants.

VIRGINIA.

Alleghany County.

(From an Occasional Correspondent.)

The Low Moor Iron Company of Virginia is erecting 50 coke ovens of the Bee Hive type, at its Covington blast furnace, and is pushing the construction of a railroad to the ore deposits along Potts Creek.

Rockbridge County.

The Victoria Furnace of the Empire Steel and Iron Company has recently been put in blast.

Empire Steel and Iron Company is making surveys for railroad to valuable limestone and iron ore properties near Victoria furnace.

WASHINGTON.

Ferry County—Republic.

(From Our Special Correspondent.)

Ben Hur.—The shaft is down and timbered about 235 ft.

Butte & Boston Mining and Smelting Company.—The Butte & Boston has been reconstructed on the assessable plan. An assessment of ½c. per share has been levied, and work will be resumed under new management.

Flag Hill.—The winze from the tunnel, on the east and west vein, is down 30 ft. The ore runs from $34 to $76 per ton. This vein near the top of the hill is about 2 ft. wide and very rich. It is rumored that the control of the stock is now in the hands of R. G. E. Leckie, manager of the Republic Mine and Mill, and Mr. D. C. Jackling, of Salt Lake.

Jim Blaine.—The drift from the No. 3 tunnel level of the Republic is 45 ft. into the Jim Blaine ground, and the ore runs from $10 to $40 per ton.

Quilp.—The management is in new hands. The winze is down 20 ft. in the pay shoot.

Republic.—The No. 4 tunnel is expected to cut the vein at 600 ft. depth soon. Rich ore continues to be taken from the south drift winz below the No. 3 level. Selected samples show native gold.

San Poil.—The south drift, in over 200 ft., is still running through a pinch in the vein.

Surprise.—The south drift from the main tunnel is in about 160 ft., the pay shoot widening. The ore may run from $80 to $100 in gold and silver. This is the second pay shoot discovered.

Trade Dollar.—Work has been resumed by a Butte, Mont., syndicate, who will put in machinery.

Okanogan County.

(From Our Special Correspondent.)

Gold Hill.—The company is sinking 3 incline shafts on vein parallel to main vein and running 3 tunnels on main vein, which at 85 ft. depth is almost vertical. Longest tunnel will be 1,500 ft., and lowest 900 ft. in depth at face. The company contemplates erecting treatment plant with wire tram from mine to mill. D. G. Chilson, Loomis, is superintendent.

Golden Zone.—This property has 4 tunnels, aggregating 2,000 ft.. connected by shaft, and is installing a 30 ton concentrator. Much ore in sight averaging $30 in gold.

Jewel.—This company, backed by English capital, has 11,000 tons of ore blocked out in its mine near Greenwood.

WEST VIRGINIA.

Jefferson County.

Ahl.—These old iron mines on the Potomac River near Bakerton are being worked again. The ore is shipped to Dunbar, Pa. It yields from 53 to 55% in iron. The mines were worked as far back as 1776, but have been idle many years.

Lewis County.

The new oil well, 1,495 ft. deep, on the Camden tract, near Weston, which promised from its position, 12 miles from any previous producing well, to be the sensation of the year, is reported to have fallen off greatly. The producing sand struck is thought to be the Big Injun formation. The well flowed at first 200 bbls. a day, increasing to 400 or 500, but now its flow is less than 30 bbls.

Preston County.

Continental Coal Company.—This company has purchased 9,000 acres of coal lands in Preston County and 12 acres of surface land near Parkersburg. The company will, it is said, erect tipples and terminal facilities to enter into the river trade, and also export coal via New Orleans to the Gulf coast of Central and South America.

WYOMING.

Albany County.

Grand Encampment District.—Oscar Elmus is reported to have sold 7 claims on Big Creek to a Chicago Company for $15,000 cash. The claim is opened by an 80-ft. shaft. Work has started on the grade of the Wyoming Southern Railroad near Fort Steele.

The Wyoming Consolidated Copper Company, a Boston concern, is developing the Cox group of copper claims at the east end of the copper belt. A tunnel is in 185 ft. and a shaft down 60 ft. On the Kurtz-Chatterton claim 1,500 ft. of development is reported done. The Doane, in Battle Lake District, continues to ship copper ore. The Ferris Haggerty is also sending good copper ore to the railroad. The wagon haul is over 40 miles. The central distributing point for the region is Saratoga. The Haskins claim is being opened by Rhode Island capital, the Portland by Denver capital, and the Hercules by Nebraska capital.

## FOREIGN MINING NEWS.

AUSTRALASIA.

Western Australia.

The gold exported in September reached a total of 167,076 crude oz., the largest quantity ever reported. For the nine months ending September 30th, the total was 1,160,201 crude oz. At the values given, this was equal to 1,071,892 fine oz., or $21,456,010.

CANADA.

British Columbia—Nelson.

Hall Mines, Limited.—This company's report for the four weeks ending September 30th shows for copper ore, 5,142 tons Silver King ore smelted, the yield being 119 tons copper and 80,000 oz. silver; an average of 2.3% copper and 15.3 oz. silver to the ton. In the lead smelting department there were smelted 116 tons of Silver King ore and 836 tons purchased ore, 952 tons in all. The yield was 170 tons lead bullion containing approximately 165 tons lead, 23,820 oz. silver and 948 oz. gold. The average result was therefore 17.3% lead, 25 oz. silver and 1 oz. gold to the ton.

British Columbia—West Kootenay District.

(From Our Special Correspondent.)

During the 20 days in Rossland ending October 7th, the Rand Drill Company received orders for 90 drills.

It is stated that there has been a partial resumption of work on Slocan properties which have been closed in consequence of the miners' strike. More activity is reported from all divisions than has prevailed for some weeks.

Rossland Ore Shipments.—The shipments from January 1st to October 12th amounted to 127,000 tons valued at $2,160,000. The weekly ore shipments now average 5,000 tons.

Center Star.—The management has given an order for a combined steam and electric compressor with a capacity of 40 drills, to be ready for shipment March 10th, 1900. The order will be filled by the Canadian Rand Drill Company of Sherbrooke, Que.

Le Roi.—The management of this Rossland mine has ordered from the Canadian Rand Drill Company of Sherbrooke, Que., an ore tram 1,000 ft. long to replace the old tram.

Slocan Silver-Lead Association.—This organization gives notice that 2,500 miners are wanted to work in the metalliferous mines of British Columbia for 8 hours per day at the following wages per day: Hand drillers, $3; machine men, $3.50; miners in shafts, $3.50 to $4; car men, $2.50 to $3.50; shovellers, $2.50; laborers, $2.50; blacksmiths, $3.50 to $4; timbermen, $3.50 to $4.

Sunset No. 2.—At the 100 ft. level drifting has been in progress some time at this Rossland mine. Two drills and about 25 men are at work.

Virginia.—Recently the management of this Rossland property, in prospecting on the surface 400 ft. east of the new shaft, found a vein which runs entirely through the claim and has been traced east to the Center Star and west to the east line of the Virginia. The country rock is diorite. The management has shipped 4 carloads of ore from this ledge to the Trail Smelter and claims that it has left a profit over expenses.

White Bear.—The shaft is down, including a sump, 360 ft.

British Columbia—Vancouver Island.

Blue Bells.—This property on Frederick's Arm, Vancouver Island, which the London & Vancouver Finance and Development Company took over from the Frederick Arm Company, has been taken over by a new English concern which may develop it. The new concern is the Blue Bells Gold Mining Company, Limited.

Coal exports for September are reported at 66,449 tons. The bulk of these shipments went to California, but 4,300 tons were for Alaska and 1,488 tons for Honolulu. For the nine months ending September 30th there were 560,053 tons exported.

Ontario—Port Arthur District.

(From Our Special Correspondent.)

On the west shores of Sturgeon Lake, 65 miles north from Ignace, on the Canadian Pacific road, Peter King and associates have found what promises to be a rich gold district. There is a water-way of about 70 miles to the fields, broken by but few small portages, and easy to get machinery and supplies over. Work will be pushed during the winter.

Some 6,000 acres of iron ore land in McGregor Township, on the north shore of Thunder Bay, have been taken up lately by a Chicago interest. The Federal Steel Company is said to have optioned some of the finds.

Badger.—A 300-ft. tunnel has tapped the vein, which carries good values, at 125 ft. underground.

Bullion Mining Company.—The management has declared a 1% dividend.

West End Silver Mountain.—This mine shipped 20 tons of rich ore via Duluth recently to the Omaha smelters. The company has now been shipping steadily for 2 years. It has not been hunting for bonanza pockets, but has taken the rock as it came.

SOUTH AMERICA.

British Guiana.

The gold reported to the Mines Department in August, on which royalty was paid, reached a total of 9,070 oz. This is a decrease of 771 oz., or 7.9%, from August of last year.

## COAL TRADE REVIEW.

**New York.** Oct. 30.

**Anthracite.**

While the anthracite trade is apt to be governed by the rise and fall of the thermometer, the continual mild weather of the past two weeks has had very little effect on buying. People seem to have made up their minds to lay in coal and have kept dealers busy. The steam sizes are in better demand at rising prices, owing to the great difficulty many concerns are having in getting an adequate supply of soft coal.

In the West the supplies available are improving. The amount that passed through the Sault to October 1st was about 112,000 tons in excess of the 1898 figures, and more coal will go forward now that high winds make return cargoes up the lakes desirable for the big steamers and barges. In Chicago territory the amount received shows improvement; prices are firm and buying has been good. The amount of nut coal is still insufficient and that size bids fair to be in short supply all winter. At Buffalo and other lower lake ports business is unusually good.

At Boston, Philadelphia and New York retail business has been generally all that dealers could desire. Prices are very firm. It is now stated that no stove and nut coal is being sold for less than $4, alongside, New York. There is probably coal being moved for less, but it is on old contracts which cannot be renewed. Those firms of middlemen who have in past years carried on a guerilla warfare with the large companies, taking full advantage of any temporary lack of harmony, find themselves up against something new. Heretofore they have found profit in playing with conflicting interests and have taken full advantage of any break in prices. This year the only sign of a break was in August, and now the situation favors a very large output and higher prices before long.

**Bituminous.**

The feature of the week in the seaboard soft coal trade has been a great advance in ocean freight rates. According to one story, certain concerns that had a contract to furnish coal for Maine ports found themselves with much coal to deliver and the time approaching when the receiving ports are liable to be closed by ice. To get this coal forward the firms had to offer inducements to vessel owners. So it came about that vessels loading at Chesapeake Bay ports were offered loading within 6 days of arrival and a demurrage of 3c. per ton for each day's delay after 6 days. To offset such an inducement, New York and Philadelphia shippers had to offer higher freight rates. This activity to get tonnage coming just when a long-continued spell of fogs and calm weather had hung up a big fleet of vessels at various points to eastward naturally sent up freight rates with a rush.

The demand for coal continues unabated, the demand from far East and the Long Island Sound points continuing strongest. All rail trade would take a great deal more if producers were not obliged to pay attention to Eastern points.

Car supply continues scant and irregular, while transportation from mines to tide is generally good. In the seaboard vessel market vessels are in great demand and rates are advancing. We give rates from Philadelphia, but these figures in many cases are known to be 10 or 15c. too low. Rates of $1,25 to $1.50 are reported to have been offered from Philadelphia to Boston, and the rates to all the down East shoal water ports are liable to be considerably higher than given. We quote rates October 18th as follows: Providence, New Bedford and the Sound, $1; Boston, Salem, Portland, Wareham, $1.10@$1.20; Portsmouth and Bath, $1.20; Bangor, $1.45; Dover, $1.50 and towages; Saco, $1.40 and towages.

**Birmingham, Ala.** Oct. 16.

(From Our Special Correspondent.)

Mine operators in Alabama predicted a good trade in the coal market for this winter some weeks since, but now they say they cannot see how they will pull through, and advise large consumers to get in as quickly as possible and buy coal. There is much coal being mined in the State, and but for the delay of the railroads in supplying cars the shipments would be greater than ever before. The fact that one of the large railroads of the district has laid in a supply for three months will not relieve the situation very much, for, according to their own reckoning, they will again be in the market just when the heaviest business is being done. The mines have been running steadily through the summer and the consumption has been enormous. The output has been recently increased, but not in proportion to the demand.

The product is bringing a pretty good price now. Most of the coal being mined in the State is staying in the State and being used here. The building of over 1,000 coke ovens will increase the amount of coal used in that direc-

tion. The demand for coke is very brisk also, and the blowing in of more furnaces means more coal and coke both. The Mississippi River trade has fallen off, and the coal which went in that direction is being used in the domestic trade now.

The railroads promise to make efforts to improve the conditions as to cars. The scarcity is quite provoking.

The miners are working satisfactorily and there is but little discontent heard. Their contract price, the maximum at that, promises to prevail until the signing of a new contract comes around. There is steady work ahead for the miners from now until July at least.

**Pittsburg.** Oct. 18.

(From Our Special Correspondent.)

The interest in coal circles this week was centered in the perfection of the railroad coal combination. The issuing of stock was completed on Wednesday and the Pittsburg Coal Company will be doing business next Monday, October 23d. Nothing has yet been said about higher prices, but a sharp advance is expected before long. The river coal combination has put up prices as was contemplated last week. All the coal in the harbor was purchased from the owners by the combination, about 20,000,000 bu., at 4c. a bu. The former price for coal afloat was 3½c. a bu. A leading member of the new combination is authority for the statement that the price for coal afloat will be 6c. within a month. This will mean unusually high prices for coal in the lower river markets. The price committee is at work arranging rates for the mills, factories and for domestic use.

Connellsville Coke.—The scramble for cars continues and shipments are curtailed owing to the inability of producers to secure the number needed to supply the demand for coke. High prices are being obtained for prompt shipment. There has been no change in the operation of the ovens. The same number was in operation last week as the week previous. The shipments last week aggregated 9,830 cars, distributed as follows: To Pittsburg and river tipples, 3,113 cars; to points west of Pittsburg, 5,074 cars; to points east of Connellsville, 1,643 cars. This is an increase of 340 cars as compared with the shipments of the week previous.

**Shanghai, China.** **Sept.** 18.

(Special Report from Wheelock & Co.)

Coal.—Japan coal is in active demand. Cardiff is quiet at higher prices than last quoted. Sydney Wollongong shows small sales. Arrivals of all kinds of coal during the fortnight amounted to 24,186 tons. Quotations per ton are as follows: Welsh Cardiff, 15 taels; Austrialian Wollongong, cargo ex-godown, 13 taels, and other sorts, 5.25@5.75 taels; Chinese, Kaiping, lump, 7.20 taels; dust, 4.60 taels, and mixed, 5.20 taels; Japan, all contracted for.

Kerosene Oil.—Considerable rise in American oil, and fairly large business done. Arrivals were 120,000 cases, making stocks 834,276 cases. Russian Batum also shows a large business. With the arrival of 145,135 cases stocks amount to 681,500 cases. Sumatra Langkat is only obtainable loose in tins. An arrival of 45,000 cases is noted, making stocks 134,000 cases. We quote: American Devoe's, 2.11½ taels per case; Russian Batum, Anchor and Horse Chop, 1.93 taels; Star & Crescent Chop, 1.91 taels, and bulk, loose, 1.64½ taels; Langkat, 1.75 taels per two tins.

## SLATE TRADE REVIEW.

**New York.** Oct. 20.

The list of prices per square for No. 1 slate standard brand f. o. b. at quarries in carload lots is given below:

**Prices of Roofing Slate.**

| Size, inches | Monson or Br'n ville. | Bangor. | Bangor Ribbon. | Alb'n, or Jackson Bangor. | Lehigh. | Peach Bottom. | Sea Gr'n. | Unfad'g Green. | Red. |
|---|---|---|---|---|---|---|---|---|---|
| | $ | $ | $ | $ | $ | $ | $ | $ | $ |
| 24 x 14 | 6.10 | 3.50 | 3.00 | 3.35 | 3.25 | 5.10 | 3.00 | ..... | ..... |
| 24 x 12 | 6.60 | 3.50 | 3.00 | 3.35 | 3.25 | 5.25 | 3.00 | 3.75 | ..... |
| 22 x 12 | 6.60 | 3.50 | 3.25 | 3.50 | .. | 5.25 | 3.00 | 3.75 | ..... |
| 22 x 11 | 6.50 | 3.75 | 3.25 | 3.50 | 3.35 | 5.25 | 3.00 | 4.00 | ..... |
| 20 x 12 | 6 90 | 3.75 | ..... | 3 50 | 3.35 | 5.25 | 3.00 | 3.75 | ..... |
| 20 x 11 | 6.80 | ..... | ..... | 4.00 | 3.35 | 5.25 | 3.00 | ..... | ..... |
| 20 x 10 | 6.80 | 4.50 | 3.50 | 4.00 | 3.60 | 5.35 | 3.25 | 4.25 | 9@16 |
| 18 x 12 | 6.80 | 3.75 | ..... | 3.50 | .... | 5.25 | 3.00 | 3.50 | ..... |
| 18 x 11 | 7.00 | ..... | ..... | ..... | ..... | ..... | 3.00 | 3.75 | ..... |
| 18 x 10 | 7.20 | 4.50 | 3.50 | 4.00 | 3.60 | 5.35 | 3.25 | 4.00 | 9@10 |
| 18 x 9 | 7.10 | 4.50 | 3.50 | 4.00 | 3.60 | 5.35 | 3 00 | 4 25 | 9@10 |
| 16 x 12 | 6.80 | 3.75 | ... | 3.50 | ..... | ..... | 2.85 | 3.50 | ..... |
| 16 x 10 | 7.10 | 4.25 | 3.50 | 4.00 | 3.60 | 5 25 | 2.85 | 4.00 | 9@10 |
| 16 x 9 | 7.00 | 4.25 | ..... | 4.00 | 3.60 | 5.35 | 2.85 | 4.25 | 9@10 |
| 16 x 8 | 7.20 | 4.50 | 3.50 | 4.00 | 3.60 | 5.35 | 2.85 | 4 25 | 9@10 |
| 14 x 10 | 6 60 | 3.75 | 3.25 | 3.35 | .... | 5 25 | 2.75 | 3.75 | 9@10 |
| 14 x 9 | 6.50 | ..... | ..... | ..... | ..... | ..... | 2.75 | 3 75 | 9@10 |
| 14 x 8 | 6 60 | 3.75 | 3.25 | 3.35 | 3.25 | 5.10 | 2.75 | 4.25 | 9@10 |
| 14 x 7 | 6.40 | 3.75 | 3.25 | 3 35 | 3.25 | 5.10 | 2.50 | 4.25 | 9@10 |
| 12 x 10 | 5.80 | .... | . | .... | ..... | ... | 2.50 | 3.25 | ..... |
| 12 x 9 | 5.60 | ... | ..... | .... | ... | .... | 2.50 | 3.25 | ..... |
| 12 x 8 | 5.50 | 3.50 | ..... | 3.35 | 3.25 | 4 85 | 2.50 | 3.50 | 8¼@8¾ |
| 12 x 7 | 5.00 | 3.25 | ..... | 3.35 | 3.25 | 4.85 | 2.50 | 3.50 | 8¼@8¾ |
| 12 x 6 | 4.80 | 3 25 | ... | 3 35 | ... | 4.75 | ..... | 3.50 | 8¼@8¼ |

A square of slate is 100 sq. ft. as laid on the roof.

In Brownville and Monson delivery quotations can be had somewhat lower than above, which is also true of other brands. No. 1 Bangor are 50c. extra when full 3-16 in. thick, and Peach Bottom 25c. extra per square. Intermediate sea green, $2.25@$2.45 per square, according to size.

Dealing in roofing slate is moderate, and prices are steady, with few exceptions. Manufactured slate is quiet. The scarcity of cars interferes with transportation from quarries.

In the export section the higher freight rates have caused a lull in shipments. The total exports from this port in September were valued at $72,843, or $20,908 less than September, 1898. For the nine months the exports aggregated $675,912, or $103,561 less than for the corresponding period last year, principally in roofing slate to the United Kingdom.

## CHEMICALS AND MINERALS

(For further prices of chemicals, minerals and rare elements, see page 510.)

**New York.** Oct. 20.

Heavy Chemicals.—Business is good. Contracts for next year's supply of alkali are being taken at quotations given below, while second hands are selling prompt delivery at 90c. per 100 lbs., f. o. b. works. Foreign high test alkali sold in a small way at 95c. from dock. Caustic soda is only offered by second hands, who report business at $1.90 f. o. b. works, while makers are said to have booked 1900 and 1901 contracts at $1.80 @$1.85 per 100 lbs. f. o. b. their works. Bicarb. soda shows further good trading in export parcels, and makers are reported to be behind with their orders. Sal soda is again feverish, owing to competition with outside domestic makers. Bleaching powder is firm, and spot stocks are scarce; sales of prime goods were recently made at $1.80@$1.90 per 100 lbs. Chlorate of potash is affected by the coming dissolution of the syndicate, about the end of this year. Large orders have been booked for next year's delivery at $8 per 100 lbs. for crystals, while powdered is quiet at quotations. Imports this week included 147 casks, 139 bbls. and 5 drums bleaching powder, and receipts of domestic goods were 785 sacks, 344 bbls. and 400 drums soda ash.

| Articles. | Domestic. | | Foreign. |
|---|---|---|---|
| | F.o.b. Works. | In New York. | In New York. |
| Alkali, in bags. | 77½@82½c. | 85@90c. | 80@85c. |
| Caustic Soda, high test | $1.77½@1.82½ | $1.85@$1.90 | ..... |
| 98% powd. | ..... | 3 12½@ 3.50 | ..... |
| 60@74% powd. | ..... | 2.50@ 2.62½ | ..... |
| Sal Soda | 60@65c. | ..... | 67½@72½ |
| " conc. | 1.35@1.60 | ..... | 1.60@1.65 |
| Bicarb. Soda. | 1.12½@1.25 | ..... | 2.12½@2.25 |
| " " extra | 3.25@3.50 | ..... | |
| Bleach. Pdr., Eng. prime. | ..... | ..... | 1.65@1.75 |
| other br'nds. | ..... | ..... | 1.50@1.60 |
| Chl. Pot cryst | ..... | 8.00@8.75 | 9.00@9.25 |
| " powd. | ..... | 9.25@9.50 | 9.50@9.75 |

Prices are generally for large quantities, and in many cases depend upon make, test and package.

Acids.—Acetic is higher, muriatic is in good demand, and sulphuric shows larger contract deliveries, while blue vitriol is featureless.

Quotations are in large lots delivered in New York and vicinity, per 100 lbs. unless otherwise specified.

| | | | |
|---|---|---|---|
| Acetic, com. No. 8. | $1.75 | Nitric, 38° | $3.75@ 3.80 |
| Blue Vitriol, best | 5.00@5.25 | Nitric, 40° | 4.00@ 4.05 |
| Chamber, 50°, ton. | 11.50@12.00 | Nitric, 42° | 4.62@ 4.65 |
| Muriatic, 18° | 1.50@ 1.20 | Oxalic | 5.75@ 6.00 |
| Muriatic, 20° | 1.25@ 1.30 | Sulphuric, 66° | 1.10@ 1.15 |
| Muriatic, 22° | 1.40@ 1.50 | Sulphurous, 100% | |
| Nitric, 36° | 3.50@ 3.55 | $SO_2$ anhydrous. | 8.00@10.00 |

Brimstone.—Freight rates are higher, hence spot best unmixed seconds are firmly held at $22 per ton. Shipments are quoted $21@$21.75 and thirds are $2 less per ton. The cargo of 500 tons of brimstone on the "Pequod" recently damaged by fire was consigned to Parsons & Pettit, of this city, and was fully covered by insurance. The fire originated in a lot of St. John's bread which was stowed on top of the brimstone.

Pyrites.—Contract deliveries predominate. Prices are unchanged.

We quote American pyrites as follows: Mineral City, Va., lump ores, $3.25 per long ton (basis 42%), and fines 3; Charlemont, Mass., lump, $5.50, and fines $4.75; Pilley's Island, lump, $6.50, and fines $4.50 per long ton, delivered in New York. Spanish pyrites, 12@14c. per unit, according to percentage of sulphur contents, delivered ex-ship New York and other Atlantic ports. Spanish pyrites contain from 46% to 51% of sulphur; American, 42% to 44%, and Pilley's Island, N. F., 50%.

Fertilizing Chemicals.—Business is quiet. September showed a fair demand for the ammoniates and a light supply of tankage. Domestic sulphate of ammonia is held at quotations in the East, while the bulk of the Western make is reported sold for two years ahead in the form of concentrated liquor. The Virginia-Carolina Chemical Company paid October 15th a dividend of 2% on the preferred stock for the quarter ending September 30th, 1899. During the week imports at New York included 3,600 bags muriate of potash, 1,000 bags manure salt and 2,000 bags sulphate of potash. The imports of muriate of potash into the United States in August amounted to 9,107,435 lbs., and for the 8 months to 59,998,809 lbs., against 57,317,105 lbs. in 1898. The exports of domestic fertilizers (not including phosphates) in August were 4,264 tons, valued at $79,586, making 34,456 tons, valued at $713,787, against 4,037 tons, valued at $109,944, in the same time last year.

| Articles. | F. o. b. Wks. | In N. Y. |
|---|---|---|
| Potash, muriate, 80@85% 100 lbs. | ..... | $1.78 |
| " " 95% " | ..... | 1.81 |
| " sulphate. 90% " | ..... | 1 93½ |
| " " 96% " | ..... | 2.10½ |
| " d'ble m're salt, 48@53% 100 lbs. | ..... | 65c. |
| " " " 30% " | ..... | 89c. |
| " kainit, 12.4%. long ton. | ..... | 8.70@8.95 |
| " sylvanit.. per unit. | ..... | 37@38c. |
| Sulph. Am., gas (25%) .... 100 lbs. | ..... | 3.00@3.05 |
| " bone..... " | ..... | 2.85@2.90 |
| Blood, dried, h-gr, Chi. per unit | $1.75 | ..... |
| " " N.Y., " | ..... | 1.85 |
| Azotine..... " | 1.75@1.80 | 1.80@ 1.85 |
| Bone black, diss., 17@18%...ton | ..... | 16.00@16.50 |
| Fish scrap, acid ..... " | 10.50@11.00 | 12 50 |
| " dried..... " | 19.50@20 | 21.50 |
| Tankage h. gr., Chicago.... " | 15.00@15.50 | 21.00 |
| " concentrated.. unit. | 1.45@1.50 | 1.90@1.95 |
| " bone. ..... ton. | ..... | 20.00@21.00 |
| Bone, steam ground... | ..... | 20.50@23.00 |

The quotations on potash are on the basis of foreign invoice weights, tares and analysis, in quantities of not less than 500 tons bulk salts or 50 tons concentrated salts.

Nitrate of Soda.—The market is firmer, owing partly to speculative operations. Spot is quoted at $1.70 per 100 lbs.; in fact, all positions up to and including March next year are held at this figure, while later shipments can be had at $1.65. The situation has been strengthened by the scarcity of tonnage and inability of securing steamers, owing to the British admiralty having chartered so many for South Africa. Steamers cannot be procured for the next five or six months on the west coast of South America. The steamer "Pacific" with 9,880 bags came into this port this week. The official statistics for Europe for the month of September are as follows: Imports, 71,880 tons; deliveries, 57,930 tons; visible supply October 1st, 436,640 tons. It is officially announced that negotiations for combinations, etc., have been abandoned for the present.

Phosphates.—As most of the foreign shipments are made in British bottoms, the South African war is lessening the supply of vessels in American waters. Consequently there is a falling off in the exports of phosphates. We note one charter to Cette, France, of 929 tons from Tampa at 21s. 6d., prompt sailing, and another to Baltimore, Md., of 522 tons from Ashley River, at $2.50. In South Carolina shipments are active, and it is reported that the State's royalty per ton being collected is much greater than last year. Florida and Tennessee operators are busy, and in the latter State there is talk of combining Columbia phosphate mining companies into a highly capitalized corporation.

Latest quotations for the European market, c. i. f. United Kingdom or North Sea ports, are as follows: Florida high grade rock (77@80%), 8⅞ d. ($13.84 per long ton); Florida pebble (68@73%), 7½d. ($10.50 per ton; Florida Peace River (58@63%), 7d. ($8.40 per ton); Tennessee high grade rock (78@80%), 7½d. ($11.85 per ton); Algerian, 63@70% rock, 7¼d. ($9.38 per ton), and 58@63% rock, 6¾ d. ($7.80 per ton).

We quote: Florida high grade, 75@80% rock, $9.50@$10 per long ton f. o. b. Fernandina. The freight rate to New York is about $2 per ton. Florida land pebble, 68@73%, $7@7.50 per ton, delivered in New York. Floride Peace River rock, 58@63%, $4.50 per ton f. o. b. Punta Gorda. South Carolina crude rock, $4.25@$4.50; hot-air dried, $4.50@$5 per long ton f. o. b. Fetteressa, S. C. Tennessee, 78% rock, $3.80@$4 f. o. b. Mt. Pleasant, and 75% rock, $2.75@$3 f. o. b. High grade Tennessee rock, ex-vessel New York, $9@$10 per ton. Hickman County blue-gray rock, 65%, and not over 3% iron and alumina, $2.50@$2.75 per ton f. o. b. mines. The difference in the price of this phosphate and Florida high grade is owing to the higher percentage of iron and alumina in the Tennessee rock. Concentrated phosphates, 13@15% av. $P_2O_5$ 60@62½c. per unit at sellers' works. Acid phosphates, $6.25 per ton for 14% in bulk f. o. b. Charleston, S. C.

**Liverpool.** Oct. 11.

(Special Report of Joseph P. Brunner & Co.)

In heavy chemicals manufacturers continue busy, and the recent advances are well maintained. The Board of Trade export returns for the month ending September 30th last have been issued and the following are particulars of shipments of alkali and bleaching powder: Total exports to all quarters, including United States, alkali, 351,593 cwts.; bleaching powder, 111,281 cwts. Exports to United States alone, alkali, 63,624 cwts.; bleaching powder, 69,232 cwts. These figures, when compared with exports for September, 1898, show an increase of about as follows: Total exports to all quarters, including United States, 13½% in alkali, 35½% in bleaching powder. On exports to United States alone,

27⅛% in alkali, 32¾% in bleaching powder. These returns are gratifying as showing the expansion of trade compared with the same period of last year. Soda ash is meeting with a good inquiry and range for tierces may be called about as follows: Leblanc ash, 48%, £4 10s.@£4 15s.; 58%, £4 15s.@£5 per ton net cash. Ammonia ash, 48%, £4 5s.@£4 10s.; 58%, £4 10s.@£4 15s. per ton net cash. Bags are 5s. per ton under price for tierces. Special quotations for United States and continent. Soda crystals are firm at £3 2s. 6d. per ton, less 5% for barrels except for a few favored markets for which special terms are quoted. Bags are 7s. per ton under price for barrels. Caustic soda is still scarce, and full prices have to be paid by buyers. Quotations for any position are as follows: 60%, £7 10s; 70%, £8 10s.; 74%, £9; 76%, £9 5s.@£9 10s. per ton net cash.

Bleaching powder is selling at £5 10s. per ton and upwards for hardwood packages, and shipments have been exceptionally heavy of late.

Chlorate of potash shows no improvement and is dull at nominally 3½@3⅝d. per lb. for crystals and 3⅝@3¾d. per lb. for powdered, as to quantity. Bids solicited for 1900 delivery.

Bicarb. soda is in moderate request at varying prices, according to destination, from £5 5s. @£6 15s. per ton, less 2½% for the finest quality in 1 cwt. kegs with usual allowances for larger packages.

Sulphate of ammonia is again easier at £11 12s. 6d.@£11 15s. per ton, less 2½% for good gray 24@25% in double bags f. o. b. here.

Nitrate of soda is still quoted at £7 17s. 6d.@ £8 per ton, less 2½% for double bags f. o. b. here, but is inclined to stiffen owing to the higher figures named by producers abroad.

**Valparaiso, Chile.**

(Special Report of Jackson Bros.)

Nitrate of Soda.—Producers have maintained their prices, notwithstanding that the European quotations showed no signs of improvement, and their firmness has been rewarded in so far as several parcels have had to be purchased to fill weeks unprovided for. Sales of 95% have been effected at 5s. 1½d.@5s. 2d. ordinary terms, and one or two parcels of 96%, 5s. 6d. steamer terms. For all next year's delivery sellers have offered 95% at 5s. ½d. steamer terms and first half at 5s., but no interest has been shown at over 5s. for July-December. The exports for August were 2,100,000 qtls., making a total of 16,500,000 qtls. for the eight months, against 12,946,000 qtls. same period last year. We quote 95% September-October at 5s. 2d., November-December 5s. 1½d., and for all 1900 5s., all ordinary terms sellers, while the 96% quality can be had at 5s. 2½d. The price of 5s. 2d. with all round freight of 27s. 6d., stands in 7s. 1½d. per cwt. net cost and freight without purchasing commission. Sales during the fortnight were 292,000 qtls., of which only 45,000 qtls. were of 96% quality.

## IRON MARKET REVIEW.

NEW YORK, Oct. 20, 1899

**Pig Iron Production and Furnaces in Blast.**

| Fuel used | Week ending Oct. 21, 1898 | | Week ending Oct. 20, 1899. | | From Jan., '98. | From Jan., '99. |
|---|---|---|---|---|---|---|
| | F'ces. | Tons. | F'ces. | Tons. | Tons. | Tons. |
| An' racite | 27 | 19,925 | 45 | 39,150 | 926,176 | 1,346,896 |
| Coke..... | 145 | 190,850 | 196 | 238,550 | 8,190,207 | 9,099,095 |
| Charcoal. | 20 | 5,975 | 25 | 6,450 | 247,809 | 232,019 |
| Totals.. | 192 | 216,750 | 266 | 284,150 | 9,364,192 | 10,678,010 |

Conditions in the iron trade have not varied materially, though a little doubt is now expressed and some people are beginning to ask whether the assumption that the present enormous demand will certainly continue through next year, is not a little too confident. Perhaps so; but the doubters are few in number compared with those who are willing to go ahead and take the chances. There is also apparent an increasing disposition on the part of some large producers to take all they can get now in the way of higher prices. This also has a bearing on the point above referred to.

In raw material there have been some large contracts for Bessemer pig placed for delivery in the second half of 1900. In foundry iron little new has been done.

The wire people have made another advance, this time of $3 a ton, on wire of all classes and on wire nails. An advance on structural material is looked for daily. It is understood that the railmakers have agreed on a $2 advance, making the prices now on a basis of $35 a ton at mill for standard sections.

Export inquiries continue; but ocean freights are going up rapidly, owing to scarcity of tonnage and the taking of many vessels for transports by the British Government. This will rather discourage business.

**Birmingham, Ala.** Oct. 16.

(From Our Special Correspondent.)

It is stated that there is a belief in the minds of pig iron purchasers that furnacemen in the Alabama District have sold iron which cannot be delivered within the stipulated time. Prominent furnacemen in this city deny both these statements, and say that the orders for pig iron were taken in good faith and when it was stipulated that delivery would be made at a certain time, the product has either been on hand or on board cars. The trouble is that the railroads cannot supply the full demand for cars. One of the companies in this district announces that it has something like 4,000 tons of pig iron delayed in the yards here because there are no cars to handle it. The market is firm and steady, with a number of inquiries being received. Price cutting is alleged, but there is no evidence to prove the assertion. There were no round-lot sales made during the past week. The production of iron in Alabama has been increased by the blowing in of two furnaces this month already, and two more are to be put in before the middle of next month.

The export trade is beginning to improve. During the past week there was an inquiry received by the Sloss Iron and Steel Company for 5,000 tons, but the reply could not be sent back promptly until rates, ship-room, etc., could be ascertained.

The following quotations are noted: No. 1 foundry, $18.50@$19; No. 2 foundry, $17.75@$18.50; No. 3 foundry, $16.75@$17.50; No. 4 foundry, $16 @$16.50; gray forge, $16@$16.25; No. 1 soft, $18.50 @$19; No. 2 soft, $17.75@$18.50.

In finished iron there is still much demand. The rolling mills are working hard and the output is finding a ready sale. The car-works and other plants throughout the country using finished iron are loud in their demands for immediate delivery, and it is stated that the mills at Gate City, near here, will be enlarged. There is much work going on at the machine shops, foundaries, pipe works and other iron-using establishments in this district. The steel plant at Ensley is nearing completion, though there is no telling exactly when it will go into blast. The new pipe plant to be constructed by D. R. P. Dimmick, James Bowron and others, now known as the Dimmick foundry, will be put in the immediate Birmingham district.

**Cleveland, O.** Oct. 17.

(From Our Special Correspondent.)

Iron Ore.—About as much business was done in the iron ore market during the past week as might have been expected under the circumstances. Very little can now be offered for sale with the expectation of delivery this year. Transactions for next year consumed much of the attention of the vessel-men and little or no attention was paid to present conditions. Offers have been received from all over the lakes for carrying ore from the head of Lake Superior at $1.25 per ton, and during the next two weeks there will be more big charters and big contracts made than have been seen on the lakes for years. There are two reasons for this. The first is that there will be more ore to be brought down the lakes next year than ever before. The second is that the vessel-men believe that $1.25, while not an extravagant price, is still a living one, and are willing to contract at that rate. There are a few who declare that rates offered are too small and at first refused to charter at that figure; but others predict that after the first excitement is over the advantage of the new rate over the one for which contracts were made this year will become evident, and are willing to place their tonnage. Therefore it may be said that the contract rate for the next year at $1.25 per ton from Duluth has been established. From this it follows that the rates from Marquette will be about $1.10 and from Escanaba $1.

Rates for single trip charters this fall are at $1.75 from Duluth and Ashland, $1.60 from Marquette, and $1.35 from Escanaba. Shipments from the upper lakes continue active.

The year's prices for ore as made at the opening of the season are as follows: Specular and magnetic ores, Bessemer quality, $4@$4.25; specular and magnetic ores, non-Bessemer, $3.25@ $3.75; red hematite ores, Bessemer quality, $3.75 @$4.25; red hematite ores, non-Bessemer quality, $2.75@$3.25.

Pig Iron.—The pig iron market continues very strong and, though no change in prices is reported, the market is firm at lightest prices lately named. The demand continues active and more metal could be sold than is offered. All furnaces are in full blast. Stock piles in all yards are more closely closed out than has ever been the case heretofore.

The following are the present quotations for iron f. o. b. Cleveland: Lake Superior charcoal, $24.50; Bessemer, $23; No. 1 foundry, $23; No. 2, $22.50; No. 1 Ohio Scotch, $22; No. 2, $21.50; gray forge, $19.

**Philadelphia.** Oct. 20.

(From Our Special Correspondent.)

Pig. Iron.—Considering how much iron has been sold the week has been exceptionally quiet. There is no change in published quotations, but higher quotations have been privately paid. Every day some frightened buyers rush into the market for iron and make more noise than those who buy by the 500 tons. Reports from over a dozen mills in the Schuylkill Valley as late as this afternoon show an enormous melting of mill irons. Every furnace is forced to do its best. The Bessemer furnaces might as well be regarded as out of the market for months. Basic iron has advanced 50c. and low phosphorus is $28. No. 2 Foundry is very much wanted and is quoted about $23.

Billets.—Billets are wanted by all users and prices are at the top notch. Consumers are asked to pay $42 for prompt delivery and $38@ $39 for next year. Mills run on orders only. There are rumors of big orders being placed.

Merchant Bars.—To all external appearances there is no change. What would be done if it could be done is another thing. Car-builders have withdrawn inquiries that have been hanging a long time. Railroad managers on many roads declare they will not have another car built at such outrageous prices as iron men ask. The car-builders have taken very little business lately. Refined iron is 2.20@2.25c.; common, 2.10c.; tested, 2.20c.; special bars, 2.50@2.60c.

Skelp.—Whatever new business may be done this month or next will be the placing on the order books of stuff promised weeks ago.

Sheets.—The same conditions prevail. Business may swell to larger proportions any time. The manufacturers are catching up, but there is no trouble to pile up new business at manufacturers' own terms.

Merchant Steel.—From private sources it is learned that large western orders have been duplicated this month and that manufacturers are once more swamped with engagements to deliver steel next year. The conviction is being forced on all that the merchant steel trade will be more active this winter than ever.

Plates.—Manufacturers' agents are figuring on business for next year for ship, car and other work that runs into thousands of tons. An effort was made to close it up a month ago, but manufacturers could not see their way. Quotations might as well be omitted this week, as buyers are making their own prices. There is a great deal of trouble over not getting boiler plate.

Steel Rails.—An advance is rumored, but those who know decline to confirm it. The orders going to mill are largely for Standard Sections and girder rails.

Scrap.—There is hardly any scrap to be had, but a good deal of scrap is passing through the railroad yard here, some of it being broken up machinery. Prices are what holders make them.

**Pittsburg.** Oct. 18.

(From Our Special Correspondent.)

The week has been a quiet one in the iron and steel markets and prices have remained about stationary. The mills are all busy but are principally filling old contracts taken before prices began to advance. Manufacturers are exerting every effort to keep prices from going any higher, being afraid of a slump before some of them have received any benefit from the present high rates. They say if prices go too high the result will be a curtailment of the demand. The sale of scrap material is something phenomenal and almost any price can be obtained. One of the unprecedented features of the present conditions is the sale of old steel rails at $30@$32 a ton. These are being replaced with new rails purchased before the boom in prices at $17 a ton. Steel rails for future delivery are now quoted at $33@$35 a ton and may go higher. The leading steel concerns are out of the market for this year on steel billets and the quotation of $40 is only nominal. Very few sales are being made, but no new business has been taken this week at less than $40. The demand for ferro-manganese has increased and the price is higher than it has been for years. Domestic 80% is now quoted at $125 a ton. From the sales of Bessemer pig iron for next year's delivery it is certain there will be no decline in prices for the first half at least. It is confidently believed that the present high rates will continue into the third quarter. No new sales of any consequence for this year's delivery have been reported during the week. Foundry iron continues active and the demand seems to be increasing and is drawing from the capacity of the Bessemer furnaces. There is no change of any consequence in the sheet market. Nothing definite has yet been done looking to the formation of the combination of sheet manufacturers. The options expire on November 1st and something may be done next week.

Pig Iron.—There has been no buying for this year's delivery during the week and it is doubtful if a large lot could be secured. It is estimated that fully 200,000 tons of Bessemer iron from Pittsburg and valley furnaces have been contracted for since September 1 for shipment next year. Prices are still quoted at $24@$24.25, Pittsburg, and $23.25@$23.50 Valley. Foundry No. 2 is quoted at $22.75@$23.25.

Steel.—There were no sales during the week and the mills seem to be sold up for the present on billets, but the price of $40 is still quoted. Basic open-hearth steel cannot be obtained at less than $50 either for delivery this year or next. Slabs are in great demand and the price ranges about $1 above the highest quotation for billets. Steel plates are firm and prices are as follows: Boiler, 3.20c.; tank, 2.90c@3c.; sheared plates, 2.90@3.15c. Beams 15-in. and under are 2.25c.; tees, 2.30c.; zees, 2.25c.; angles, 2.25c.; channels, 2.25c.

Sheets.—The sheet market remains about the same as last week and it is not likely that prices will be advanced until something definite is done in the project to consolidate the interests of the country.

Ferro-manganese.—There has been a stiff jump in prices and 80% domestic is now selling at $125 a ton for small lots. It is doubtful if the old price of $100 can be obtained even for a big order.

**Cartagena, Spain.** Oct. 7.

(Special Report of Barrington & Holt.)

Iron and Manganiferous Ores.—For the month of September 13 cargoes have been shipped. Of these 6 were dry ore, 6 of manganiferous and 1 of Subida campanil ore. Freights have been very high throughout the month, as is usual at this time of the year, and tonnage is difficult to secure. There is an active demand for all classes of iron ore, especially dry ore, for shipment next year. Considerable business is being refused for the first half of the year's delivery. All sales that have been made are reported at 6@9d. per ton higher than sales for the last half of the present year.

We quote iron ores per ton as follows: Ordinary 50% Portman, 6s. 3d.@6s. 9d.; special low phosphorus, 6s. 7.@6s. 11d.; extra quality low phosphorus, 7s. 3d.; special ore, 7s. 9d.; specular, 9s. 9d.; f. o. b. Cartagena or Portman. Manganiferous ores we quote: No. 1, containing 20% iron and 20% manganese, 15s.; No. 1 B, 25% iron and 17% manganese, 12s.; No. 2, 30% iron and 15% manganese, 11s. 6d.; No. 3, 35% iron and 12% manganese, 9s. 10d.; all f. o. b. Cartagena. Any new tax that may levied to be paid by buyers.

**New York.**

There are few changes in the local iron market. Products remain in good demand with prices firm. In foreign trade we note shipments and orders of machine tools to Germany aggregating over $60,000 and shipments of $10,000 worth of manufactured iron to Chili.

Pig Iron.—Eastern foundry-men who must have iron to cover visible needs find trouble in getting it, but an increasing tonnage for delivery far into next year is being placed. We quote for delivery within a few months Northern brands, tidewater delivery: No. 1 X foundry, $24.50; No. 2, $23.75; No. 2 plain, $22.25. Southern brands, New York delivery: No. 1 foundry, $23.75; No. 2 foundry, $22.75; No. 1 soft, $22.50; No. 2 soft, $22; No. 3, $21.

Warrant irons show few changes since last reported. Alabama No. 2 foundry remains at $18, but No. 3 has fallen to $16; No. 4, $15¾@$15¼; gray forge is steady at $15½@$15¾.

Bar Iron.—The market is very firm. We quote refined iron as high as 2.30c. in large lots on dock, and common, 2.05c.

Plates.—No change in the situation. We quote for large lots at tidewater: Tank, ¼-in. and heavier, 3.10c.; tank, 3/16-in., 3.20c.; shell, 3.25c.; flange, 3.40c.; marine, 3.40c.; firebox, 3.50c.; universls, 2.95c. These quotations are for delivery some months ahead. Tank ¼-in. plates for immediate delivery are quoted up to 4c.

Structural Material.—Contracts for structural material continue to come in. A great piece of work that may be on the market soon is the cantilever bridge across the East River at Blackwell's Island. Prices are going up. We quote for large lots at tidewater: Beams, 15-in., 2.50c.; tees, 2.55c.; channels, 2.55c.; angles, 2.45c., with much higher figures for prompt delivery.

Steel Rails.—There is some buying. Quotations nominally are about $35@$36 for standard sections f. o. b. Eastern mills. Smaller rails nominally may be quoted: 12-lb., $40; 16-lb., $40; 20-lb., $38; 30-lb., $38; 40-lb. to standard, $37, with the usual advance for small orders.

Nails.—Nails continue in good demand, and the market remains firm. The New York prices for wire nails are: Car-load lots on dock, $3.10; less than car-loads on dock, $3.15@$3.25; small lots from store, $3.30@$3.40. Cut nails are quoted on dock in car-load lots, $2.65@$2.75; smaller lots, $2.70@$2.80.

## METAL MARKET.

NEW YORK, Oct. 20, 1899.

### Gold and Silver.

**Gold and Silver Exports and Imports**

At all United States ports in September and year.

| | September. | | Year. | |
|---|---|---|---|---|
| | 1898. | 1899. | 1898. | 1899. |
| GOLD. | | | | |
| Exports | $3,102 810 | $1,056,749 | $12,781,923 | $33,315.592 |
| Imports | 16,808,341 | 2,572,028 | 127,343,816 | 34,246,555 |
| Excess | I. $13,705,531 | I. $1,515,279 | I.$114,561,893 | E. $930,963 |
| SILVER. | | | | |
| Exports | 5,152 103 | 3.622,147 | 39,433,500 | 38,738,937 |
| Imports | 2,000,696 | 2,040,914 | 21,099,224 | 22,388,163 |
| Excess | E. $3,151.407 | E. $1,581,233 | E.$18,334,226 | E.$16,350,374 |

This statement includes the exports and imports at all United States ports, the figures being furnished by the Treasury Department.

**Gold and Silver Exports and Imports, New York**

For the week ending October 19th, 1899, and for years from January 1st, 1899, 1898, 1897, 1896.

| Period | Gold. | | Silver. | | Total Ex. cess, Exp or Imp. |
|---|---|---|---|---|---|
| | Exports. | Imports. | Exports. | Imports | |
| We'k | $51,908 | $941,782 | $778,445 | $43,091 | I. $154,520 |
| 1899.. | 11.610,623 | 13,008,944 | 24,113,702 | 2,964,367 | E. 18,751,017 |
| 1898.. | 9,981,105 | 93,486,695 | 27,512,490 | 2,444 819 | I. 7113$,21 |
| 1897.. | 48,132,162 | 13.085,634 | 22,433,113 | 1,928,627 | E. 65,551,013 |
| 1896.. | 40,433,938 | 62,093,796 | 31,601,581 | 3,267,737 | E. 6,634,996 |

Exports of gold were chiefly to the West Indies; silver to London. Imports of gold came principally from Great Britain; those of silver from India.

The United States Assay Office in New York reports the total receipts of silver at 152,000 oz. for the week.

**Prices of Foreign Coins.**

| | Bid. | Asked |
|---|---|---|
| Mexican dollars | $ .47½ | $ 49 |
| Peruvian soles and Chilean pesos | .42½ | .44½ |
| Victoria sovereigns | 4.85 | 4.88 |
| Twenty francs | 3.84 | 3.88 |
| Twenty marks | 4.74 | 4 79 |
| Spanish 25 pesetas | 4.78 | 4.82 |

**Average Prices of Silver per oz. Troy.**

| Month | 1899. | | 1898. | | 1897. | |
|---|---|---|---|---|---|---|
| | Lond'n Pence. | N. Y. Cents. | Lond'n Pence. | N. Y. Cents. | Lond'n Pence. | N. Y. Cents. |
| January | 27.42 | 59.36 | 26.29 | 56.[illegible] | 29.74 | 64.79 |
| February | 27.44 | 59.42 | 25.89 | 56.0[illegible] | 29.68 | 64.67 |
| March | 27.48 | 59.64 | 25.47 | 55.90 | 28.96 | 63.06 |
| April | 27.65 | 60.10 | 25.9[illegible] | 55.02 | 28.36 | 61.85 |
| May | 28.15 | 61.23 | 26.[illegible] | 56.98 | 27.86 | 60.42 |
| June | 27 77 | 60.43 | [illegible] | 58.61 | 27.58 | 60.10 |
| July | 27 71 | 60 26 | 27.[illegible] | 59.06 | 27.36 | 59.61 |
| August | 27.62 | 60.00 | 2[illegible] | 59.54 | 24.93 | 54.19 |
| September | 27.15 | 58.89 | [illegible] | 60.68 | 25 66 | 55.[illegible]4 |
| October | ..... | ..... | 27.96 | 60.42 | 26.77 | 57.57 |
| November | ..... | ..... | 27.93 | 60.60 | 26.87 | 57.93 |
| December | ..... | ..... | 27.45 | 59.42 | 26.83 | 58.01 |
| Year | ..... | ..... | 26.76 | 58 26 | 27.55 | 59.79 |

The New York prices are per fine ounce; the London quotation is per standard ounce, 925 fine.

**Average Prices of Metals per lb., New York.**

| Month. | COPPER. | | TIN. | | LEAD. | | SPELTER. | |
|---|---|---|---|---|---|---|---|---|
| | 1899. | 1898. | 1899. | 1898. | 1899. | 1898. | 1899. | 1898. |
| Jan | 14.75 | 10.99 | 22.48 | 13.87 | 4.18 | 3.65 | 5.34 | 3.96 |
| Feb | 18.00 | 11.28 | 24 20 | 14 08 | 4.49 | 3.71 | 6.28 | 4.04 |
| March | 17.54 | 11.98 | 23.82 | 14 38 | 4.37 | 3.72 | 6.31 | 4.25 |
| April | 18.43 | 12.14 | 24.98 | 14.60 | 4.31 | 3.63 | 6.67 | 4.26 |
| May | 18.25 | 12 00 | 25.76 | 14.52 | 4.41 | 3.64 | 6.88 | 4.27 |
| June | 17.93 | 11 89 | 25.85 | 15.22 | 4.43 | 3.82 | 5 98 | 4.77 |
| July | 18 33 | 11.63 | 29.63 | 15.60 | 4.52 | 3.95 | 5.82 | 4.66 |
| August | 18.50 | 11 89 | 31.53 | 16.23 | 4.57 | 4.00 | 5.65 | 4.58 |
| Sept | 18.46 | 12.31 | 32.74 | 16.03 | 4.58 | 3.99 | 5.50 | 4.67 |
| October | ..... | 12.41 | ..... | 17.42 | ..... | 3.78 | ..... | 4.98 |
| Nov | ..... | 12.86 | ..... | 18.20 | ..... | 3.70 | ..... | 5.29 |
| Dec | ..... | 12.93 | ..... | 18.30 | ..... | 3.76 | ..... | 5.10 |
| Year | ..... | 12.03 | ..... | 15 70 | ..... | 3.78 | ..... | 4.57 |

The price given in the table is for Lake Copper. The average price of electrolytic copper in January was 14.26c.; in February it was 17.02c.; in March, 16.35c.; in April, 17.12c.; in May, 17.26c.; in June, 16.89c.; in July 17.09c.; in August, 17.42c; in September, 17.34c.

### Financial Notes of the Week.

There has been some improvement in the speculative markets, while the condition of general business shows continued activity and strength. Money is easier in New York, but the European exchanges show continued disturbance and uneasiness, with high rates. The Bank of England official rate is now 5%, having been raised from 3½%. There is much talk about supplies of gold; some remarks on this point will be found in our editorial columns.

The silver market has continued dull and steady, without special feature. After the filling of the coinage order last week, London sagged off in price to 26⅝d. and closed at that figure.

The following table shows the specie holdings of the leading banks of the world at the latest dates covered by their reports. The amounts are reduced to dollars, and comparison is made with the holdings at the corresponding dates last year.

| Banks. | 1898. Gold. | 1898. Silver. | 1899. Gold. | 1899. Silver. |
|---|---|---|---|---|
| N.Y. Ass'd. | $147,945,100 | ..... | $145,337,700 | ..... |
| England | 155,979,755 | ..... | 163,788,610 | ..... |
| France | 369,690,955 | $246,190,640 | 380,584,710 | $234,933,015 |
| Germany | 120,970,000 | 62,315,000 | 114,685,000 | 59,080,000 |
| Spain | 54,700,000 | 26,210,000 | 67,260,000 | 68,500,000 |
| Aus.-Hun | 176.040.000 | 62,640,000 | 184.015,000 | 63.070,000 |
| Neth'l'ds | 21,565,000 | 33,475,000 | 13,710 000 | 29,340,000 |
| Belgium | 14,305.000 | 7,155,000 | 14,845.000 | 7,420,000 |
| Italy | 73,405,000 | 11,015,000 | 77.460,000 | 7.135.000 |
| Russia | 513,760,000 | 19,265,000 | 445,065,000 | 23,385,000 |

The returns of the Associated Banks of New York are of date of October 14th, and the others are of date of October 12th, as reported by the "Commercial and Financial Chronicle" cable. The New York banks do not report silver sepa-

**Imports and Exports of Metals.**

| Port. | Week, Oct. 18. | | Year 1899. | |
|---|---|---|---|---|
| | Expts. | Impts. | Expts. | Impts. |
| ***New York.** | | | | |
| Aluminum.....long tons | 2 | ..... | 333 | 12 |
| Antimony ore... " " | ..... | ‡35 | ..... | 1,400 |
| " regulus.. " " | ..... | ‡40 | ..... | 860 |
| Brass ..... " " | ..... | ..... | ..... | ..... |
| Chrome ore..... " " | ..... | ‡5 | ..... | 2,043 |
| Copper, fine ..... " " | 1,189 | 1,091 | 44,563 | 21,899 |
| " matte.. " " | ..... | ..... | 556 | 878 |
| " ore..... " " | ..... | 2,026 | ..... | 39,390 |
| " ash..... " " | ..... | ..... | ..... | 187 |
| " sulphate " " | 83 | ..... | 11,516 | ..... |
| " other... " " | ..... | ..... | ..... | 135 |
| Cop-nickel matte " " | ..... | ..... | ..... | 53 |
| Ferro-mangan'se " " | ..... | ..... | ..... | 278 |
| Iron ore ..... " " | ..... | ..... | ..... | 50 |
| " pig, bar, rod " " | 268 | ‡167 | 5,587 | 3,320 |
| " pipe..... " " | 275 | ..... | 23,103 | ..... |
| " plates, sheets " " | ..... | ..... | 748 | 146 |
| " other.. ..... " " | 35 | ..... | 1,179 | ..... |
| Lead..... " " | 1,145 | ..... | 44,555 | 44,718 |
| " ore..... " " | ..... | ..... | ..... | 941 |
| Manganese, ore. " " | ..... | ‡717 | ..... | 5,865 |
| Metals, old scrap " " | 33 | ‡114 | 4,191 | 3,704 |
| Composition... " " | 170 | ..... | 6 099 | 140 |
| Nails..... " " | 583 | ..... | 15,851 | ..... |
| Nickel ..... " " | ..... | ‡5 | 1,542 | 105 |
| " Ore ..... " " | ..... | ..... | ..... | 4,020 |
| §Railr'd material " " | ..... | 165 | 7,122 | 3,492 |
| Rails, old..... " " | ..... | ..... | 15,417 | ..... |
| Spiegeleisen..... " " | ..... | ..... | ..... | 511 |
| Steel bars, plates " " | ..... | ‡348 | 37,985 | 13,474 |
| " rails..... " " | 53 | ..... | 44,032 | 155 |
| " hoops..... " " | ..... | ..... | 831 | ..... |
| " wire..... " " | 764 | ..... | 32,196 | 938 |
| " not speci'd. " " | 209 | 194 | 24,942 | 11.334 |
| Tin ..... " " | ..... | 135 | ..... | 23,003 |
| " dross or ashes " " | ..... | ..... | 63 | ..... |
| " and black plates " " | ..... | ‡917 | ..... | 27,454 |
| Zinc..... " " | ..... | ..... | 272 | 358 |
| " dross..... " " | ..... | ..... | 437 | ..... |
| " ashes, skim " " | 2 | ‡35 | 2,022 | 226 |
| " ore..... " " | ..... | ..... | 6,972 | ..... |
| " oxide ..... " " | 159 | ..... | 3,543 | 288 |
| **†Baltimore.** | | | | |
| Alumina ..... bags | ..... | ..... | ..... | 3,479 |
| Antimony regulus...casks | ..... | ..... | ..... | 286 |
| Chrome Ore.....long tons | ..... | ..... | ..... | 2,300 |
| Copper, fine..... " " | 160 | 155 | 28,804 | 1,676 |
| " matte... " " | ..... | ..... | ..... | ..... |
| " sulphate " " | ..... | ..... | 1,562 | ..... |
| " pipe..... " " | ..... | ..... | 100 | ..... |
| Ferro-manganese " " | ..... | 97 | ..... | 2,113 |
| Ferro-silicon..... " " | ..... | ..... | 184 | 95 |
| Iron pig, bar, etc. " " | ..... | 44 | 1,209 | 6,025 |
| " ore..... " " | ..... | 3,346 | ..... | 203,473 |
| " pyrites..... " " | ..... | ..... | ..... | 41,107 |
| Manganese ore.. " " | ..... | ..... | ..... | 53,181 |
| Metals, scrap..... " " | ..... | ..... | 4,604 | 24 |
| Nails ..... " " | ..... | ..... | 674 | ..... |
| Pipe, iron & steel " " | 906 | ..... | 11,184 | ..... |
| Spiegeleisen..... " " | ..... | ..... | ..... | 1,028 |
| Steel, bars, pl'es.. " " | 738 | ..... | 33,572 | ..... |
| " wire ..... " " | ..... | ..... | 1,011 | 23 |
| " rails..... " " | 3,082 | ..... | 61,667 | 276 |
| not specified.. " " | 22 | 6 | 2,761 | 23 |
| Tin..... " " | ..... | ..... | 563 | ..... |
| " dross..... " " | ..... | ..... | ..... | ..... |
| " and blackplates " " | ..... | 84 | ..... | 2,401 |
| " other..... " " | ..... | ..... | 43 | ..... |
| Zinc..... " " | ..... | ..... | 25 | 5 |
| " dross..... " " | ..... | ..... | 231 | ..... |
| " skimmings.. " " | ..... | ..... | 131 | ..... |
| ***Philadelphia.** | | | | |
| Antimony.....long tons | ..... | ..... | ..... | 10 |
| Chrome ore..... " " | ..... | ..... | ..... | 3,760 |
| Copper ore..... " " | ..... | ..... | ..... | 32,940 |
| " old..... " " | ..... | ..... | ..... | 11 |
| Ferro-manganese " " | ..... | ..... | ..... | 1,442 |
| Ferro-silicon..... " " | ..... | ..... | ..... | 160 |
| Iron, pig..... " " | ..... | ‡175 | ..... | 2,895 |
| " ore..... " " | ..... | 13,300 | ..... | 206,923 |
| " pyrites..... " " | ..... | 12,253 | ..... | 7,503 |
| Manganese ore.. " " | ..... | ..... | ..... | 66,618 |
| Steel sheets..... " " | ..... | ..... | ..... | 510 |
| Spiegeleisen..... " " | ..... | ..... | ..... | 2,070 |
| Tin..... " " | ..... | 10 | ..... | 1,040 |
| " and black plates " " | ..... | ‡109 | ..... | 4,221 |
| Zinc dust..... " " | ..... | ..... | ..... | ..... |
| " ore ..... " " | ..... | ..... | 3,093 | ..... |

**Total United States.§§**

| Articles. | Aug. | | Jan.—Aug. | |
|---|---|---|---|---|
| | Expts. | Impts. | Expts. | Impts. |
| Antimony..... long tons | ..... | 257 | ..... | 1,008 |
| " ore.... " " | ..... | 5 0 | ..... | 1,442 |
| Copper fine ..... " " | 10,544 | 619 | 66,044 | 16,779 |
| " sulphate.. " " | 156 | ..... | 11,442 | ..... |
| " ore & matte " " | ..... | 2,122 | 3,794 | 6,243 |
| Iron, pig & bar.. " " | 15,802 | 4,510 | 186,159 | 31,551 |
| " ore..... " " | 8,264 | 73,555 | 15.673 | 371,291 |
| Iron& steel plates " " | 3,678 | 837 | 44,515 | 2,243 |
| " " wire " " | 11,269 | 273 | 74,958 | 1,803 |
| Steel, billets, rods, etc..... " " | 2,589 | 1,492 | 62,043 | 17.847 |
| Steel rails.. ..... " " | 29,567 | ..... | 159,735 | 1,123 |
| Lead, pigs, bars & old ..... " " | 5 | 65 | 46 | 206 |
| Lead in ore..... " " | 5,823 | 5,925 | 48,106 | 57,068 |
| Nails, cut..... " " | 813 | ..... | 6,251 | ..... |
| " wire ..... " " | 2,913 | ..... | 20,073 | ..... |
| Tin..... " " | 33 | 3,284 | 286 | 22,693 |
| " plates..... " " | 23 | 6,461 | 216 | 38.061 |
| Zinc ..... " " | 19 | 205 | 5,756 | 798 |
| " ore ..... " " | 1,961 | ..... | 16,794 | ..... |

*New York Metal Exchange returns. †By our Special Correspondent. §Not specified. ‡Week ending Oct. 13th. §§ Monthly returns of the Treasury Department.

The duties on metals under the present tariff law are as follows: Antimony, metal or regulus, ¾c. a lb. Lead, 1½c. a lb. on lead in ores; 2½c per lb. on pigs, bars etc.; 2½c. on sheet, pipe and manufactured forms. Nickel, 6c. per lb. Quicksilver, 7c. per lb. Spelter or zinc, 1½c. per lb. in pigs and bars; 2c. on sheets, etc. Copper, tin and platinum are free of duty.

rately, but the specie carried is chiefly gold coin. The Bank of England reports gold only.

The statement of the United States Treasury on Friday, October 19th, shows balances in excess of outstanding certificates as below, comparison being made with the statement for the corresponding date of last week:

| | Oct. 12. | Oct. 19. | Changes. |
|---|---|---|---|
| Gold | $257,358,552 | $254,861,055 D. | $2,497,497 |
| Silver | 6,821,892 | 8,016,061 I. | 1,194,169 |
| Legal tenders | 16,048,647 | 15,693,903 D. | 354,744 |
| Treas. notes, etc. | 1,201,060 | 1,033,457 D. | 167,603 |
| Totals | $281,430,151 | $279,604,476 D. | $1,825,675 |

Treasury deposits with national banks amounted to $83,896,282, an increase of $1,391,625 during the week.

The statement of the New York banks—including the 63 banks represented in the Clearing House—for the week ending October 14th gives the following totals, comparison being made with the corresponding weeks in 1898 and 1897:

| | 1897. | 1898. | 1899. |
|---|---|---|---|
| Loans and discounts | $589,117,000 | $646,103,400 | $705,899,900 |
| Deposits | 616,079,600 | 727,444,200 | 774,946,200 |
| Circulation | 15,866,700 | 15,496,600 | 15,586,900 |
| Reserve: | | | |
| Specie | 94,886,700 | 147,945,100 | 145,337,700 |
| Legal tenders | 73,747,700 | 53,502,500 | 49,576,200 |
| Total reserve | $168,634,400 | $201,447,600 | $194,913,900 |
| Legal requirements | 154,019,900 | 181,786,050 | 193,736,550 |
| Balance, surplus | $14,614,500 | $19,664,550 | $1,177,350 |

Changes for the week, this year, were increases of $52,000 in circulation, $895,700 in legal tenders, and $534,150 in surplus reserve; decreases were $4,682,600 in loans and discounts, $6,212,600 in deposits, and $1,914,700 in specie.

Exports of merchandise from the United States in September were again large, exceeding those of August by $5,791,665, and those of September, 1898, by $19,791,748. For the nine months ending September 30th the statement of the Bureau of Statistics of the Treasury Department gives the following figures:

| | 1898. | 1899. |
|---|---|---|
| Exports | $869,278,144 | $903,028,508 |
| Imports | 475,378,955 | 585,736,106 |
| Excess, exports | $393,899,189 | $317,292,402 |
| Add excess of exports, silver | | 16,350,474 |
| Total | | $333,642,876 |
| Deduct excess of imports, gold | | 930,963 |
| Total apparent balance | | $332,711,913 |

The gold and silver movement in detail will be found in the usual place, at the head of this column.

Shipments of specie by water from San Francisco in September included $701,110 gold and $724,418 silver. For the nine months ending September 30th the shipments were as follows:

| | Gold. | Silver. | Totals. |
|---|---|---|---|
| Hongkong | $42,252 | $4,090,802 | $4,133,054 |
| Shanghai | | 635,442 | 635,442 |
| Japan | 6,395 | 200 | 6,595 |
| New Zealand | 2,500 | | 2,500 |
| South Sea Islands | 3,937 | 1,000 | 4,937 |
| Central America | 4,636 | 5,964 | 10,600 |
| Mexico | 1,375 | 27,000 | 28,375 |
| Total foreign | $61,095 | $4,760,408 | $4,821,503 |
| Honolulu | 2,305,595 | 152,857 | 2,458,452 |
| New York | 8,965,729 | 124,625 | 9,090,354 |
| Totals | $11,332,419 | $5,037,890 | $16,370,309 |
| Totals, 1898 | 31,896,465 | 7,222,873 | 39,119,338 |

Shipments of Mexican dollars were $341,458 in September, and for the nine months $1,891,573, against $3,192,608 in 1898. The gold shipped included $13,000 in bars, $1,324 in dust and $6,395 in Japanese yen, the balance being United States coin, partly to Honolulu, but chiefly to New York. The silver included $2,961,683 in bars; $51,657 in South American coin; $1,891,573 (as above) in Mexican dollars, the balance being in United States coin, chiefly to Honolulu. Besides the shipments above, there was sent to Honolulu in September $1,000 in 5c. nickel coins. The decrease in gold this year was chiefly in shipments of coin to New York.

Shipments of silver from London to the East for the year up to October 5th, 1899, are reported by Messrs. Pixley & Abell's circular as follows:

| | 1898. | 1899. | Changes. |
|---|---|---|---|
| India | £3,473,390 | £4,062,025 | I. £588 635 |
| China | 433,756 | 1,039,563 | I. 605,807 |
| The Straits | 337,037 | 203,008 | D. 134,029 |
| Totals | £4,244,183 | £5,304,596 | I. £1,064,413 |

Arrivals for the week, this year, were £89,000 from New York, £30,000 from Australia, and £5,000 from Mexico; total, £124,000, all bar silver. Departures were £165,000 to Bombay and £2,500 to Calcutta; total, £167,500, all bar silver.

Indian exchange is strong, and a small fractional advance was made the 60 lakhs of Council bills offered in London being taken at an average of 16.10d. per rupee. The offerings of bills will be reduced to 50 lakhs for the present.

## Other Metals.

### Daily Prices of Metals in New York.

| October. | Sterling Exchange. | Silver. Fine oz. Cts. | Silver. London. P'nce | Copper. Lake, cts. ₱ lb. | Copper. Electrolytic, ₱ lb. | Copper. Lond'n standard £ ₱ ton. | Tin, cts. ₱ lb. | Lead, cts. ₱ lb. | Spelter, cts. ₱ lb. |
|---|---|---|---|---|---|---|---|---|---|
| 11 | 4.86⅝ | 58⅛ | 26¾ | 18 | 17 | ..... | 32⅛ | 4.57½@5.50 | |
| 16 | 4.86⅝ | 58 | 26⅛ | 18 | 17 | 75 10 0 | 32¼ | 4.57½@5.45 | |
| 17 | 4.86⅝ | 57⅞ | 26⅝ | 18 | 17 | 75 12 6 | 32¼ | 4.57½@5.45 | |
| 18 | 4 86¾ | 57⅞ | 26⅛ | 17⅞ | 17 | 75 5 0 | 32¼ | 4.57½@5.37½ | |
| 19 | 4.87 | 57⅞ | 26⅝ | 17¾ | 17 | 75 0 0 | 32¼ | 4 57½@5.37½ | |
| 20 | 4.87 | 57⅞ | 26⅝ | 17¾ | 17 | 74 17 6 | 32 | 4.57½@5.37½ | |

The quotations given for electrolytic copper are for cakes, ingots and wirebars; the price of electrolytic cathodes is usually 0.25c. lower than these figures.

Correction.—In our issue of October 14th, page 474, the price of Lake copper ought to have read 18¼ instead of 18½, as it appeared in some copies only of our last week's issue.

Copper.—Consumers continue to show very little interest in the market and even at the lower quotations for Lake, there is not much inclination to buy. It has transpired that Lake copper a week ago was sold by first hands at 18c., and more is offered thereat, but even at the lower figure we cannot hear of any business being transacted. We quote the market 17¾@18c. Electrolytic copper shows no material change and has to be quoted 17c. for cakes, bars or ingots. It appears that the wide difference between the two descriptions which has existed for many months would to a certain extent now disappear. Cathodes we have to quote 16⅝@16¾c., while casting copper is nominal at 17c.

The foreign market continues fairly steady, with a continued good demand for fine copper, most of which has been met by European refiners, who are selling somewhat below the parity of American producers. A continued good demand is reported. The speculative market has again been somewhat unsettled, mostly on account of the high money rates ruling abroad as well as the unsettled political outlook and prices for the week show a decline of about 15s. Spot copper opened at £75 10s. and closes at £74 17s. 6d. for spot, and 5s. higher for three months prompt.

Refined and manufactured we quote: English tough, £78 15s.@£79 5s.; best selected, £80 10s.@£81; strong sheets, £87 10s.@£88; India sheets, £84 10s.@£85; yellow metal, 6⅞@7d.

The statistical position continues to improve and the visible supplies at the middle of this month were cabled as being smaller by 2,200 tons than at the end of September.

Copper production, as reported by Mr. John Stanton, who acts as statistician for the companies, was as follows for September and the nine months ending September 30th, in long tons (2,240 lbs.) of fine copper:

| | September. 1898. | September. 1899. | Nine months. 1898. | Nine months. 1899. |
|---|---|---|---|---|
| U. S. reporting mines | 17,064 | 19,515 | 162,111 | 169,921 |
| U. S. outside sources | 1,700 | 3,200 | 12,700 | 21,300 |
| Total U. S. | 18,764 | 22,715 | 174 811 | 191,221 |
| Foreign reporting mines | 7,122 | 7,839 | 61,705 | 66,150 |
| Totals | 25,886 | 30,554 | 236,516 | 257,371 |
| Exports U. S. | 11,280 | 7,553 | 105 342 | 82,195 |

For September the United States production was almost exactly the same as in August, but greater by 3,951 tons, or 21.0%, than in September of last year. For the nine months the United States production shows an increase of 16,410 tons, or 9.4%, over last year. At the same time, there was a decrease of 24,147 tons, or 22.8%, in the United States exports, indicating an approximate increase of 40,557 tons in consumption. The foreign reporting mines show an increase this year of 4,445 tons, or 7.2%, in production.

Tin continues unsettled and is again slightly lower than last week. Consumption is very good, but considering the recent large fluctuations, consumers have been holding back somewhat, though an early revival of the demand may be looked for. Stocks in New York continue rather light and we quote for spot and October 32c., and for futures 32⅛c.

The London market opened at £145 12s. 6d. for spot, and at one time during the week touched £144, closing at £144 17s. 6d. for spots and £145 2s. 6d. for three months.

Advices from the East are to the effect that no increase in the production may be looked for for several months.

Lead.—A large and active business has been done and consumers have bought more freely than for some time past. The scarcity of spot lead in the East continues, owing to the difficulty of getting shipments through in a reasonable time from the West. The corroding business is said to be excellent. We quote 4.55@4.60c. New York and 4.45@4.50c. St. Louis.

The foreign market contiuues rather irregular. Spot abroad is also very scarce and commands a premium. Spanish lead is now quoted £16@£16 7s. 6d., and English lead 5s. higher; but sales for forward delivery can only be made at a reduction of from 7s. 6d@10s.

St. Louis Lead Market.—The John Wahl Commission Company telegraphs us as follows: Lead is dull at 4.47½@4.50c. Trading is very light.

Spelter.—The fight between the Miners' Association and the smelters continues, and the former voted the end of last week to keep the mines closed until the end of the month. This has necessitated the further blowing out of some furnaces, and we estimate production at the present moment to be going on at the rate of only about 8,500 tons monthly as against 11,000 tons a few months ago. The small accumulation of stocks held at the smelters is being rapidly consumed, notwithstanding which galvanizers are holding back somewhat, speculating on an early settlement of thedispute. We have to quote 5.20@5.25c. East St. Louis and 5⅝@5.45c. New York.

In London good ordinary spelter is quoted £22 7s. 6d., and specials £22 12s. 6d.

Antimony is without any change. We quote Cookson's 10½@11c.; Hallett's, 9¾@9⅞c.; U. S. Star and Hungarian, 9½@9⅝c.

Nickel continues on unchanged lines, and no alteration in prices can be reported. We quote for ton lots, 33@36c. per lb., and for smaller orders, 35½@38c. London prices are 14@16d. per lb., according to size of order.

Platinum.—Demand is good, and prices are firmer. In large lots we quote $17.75, and for smaller quantities, $18 per oz. in New York.

For chemical ware (crucibles and dishes), best hammered metal, we quote as follows: In lots of 250 grams or more, 67½c. per gram, and for smaller quantities, 70c. per gram; unmanufactured platinum will be supplied in same quantities at 2c. less per gram.

Quicksilver.—The New York quotation is unchanged at $48 per flask. The London price is also unchanged at £8 17s. 6d., with the same figure named from second hands.

Quicksilver receipts at San Francisco in September were 1,741 flasks. For the nine months ending September 30th, they were 17,204 flasks, against 17,591 last year and 12,060 in 1897. The shipments from San Francisco by sea for the nine months were: Australia, 210 flasks; Siberia, 2; China, 4,000; Central America, 1,330; Mexico, 3,029; British Columbia, 43; New York, 118; total, 8,732 flasks, against 4,792 last year. Shipments of quicksilver overland by rail and shipments direct from the mines are not reported.

The Minor Metals.—Quotations are given below for New York delivery:

| Aluminum. | Per lb. | | Per lb. |
|---|---|---|---|
| No. 1, 99% ingots | 35@37c. | Bismuth | $1.45@$1.50 |
| No. 2, 90% ingots | 31@34c. | Magnesium | $2.75@$3 |
| Rolled sheets | 38c. up | Phosphorus | 40@50c. |
| Alum.-bronze | 20@23c. | Tungsten | 70c. |
| Nickel-alum | 33@39c. | Ferro-tungsten, 60% | 60c. |

Variations in price depend chiefly on the size of the order.

## LATE NEWS.

A despatch from Cleveland, O., October 19th, says: "Until May 1st, 1900, the Carnegie-Oliver interests will have absolute control of the entire output of all the steamship yards of the American Shipbuilding Company. Contracts have just been closed wherein the company agrees to build for the Carnegie interests alone, and two more big vessels were ordered to-day. This means that unless new yards are established or existing ones enlarged, no one but the Carnegie people can get a big steel vessel even contracted for before the opening of navigation in 1900. There are only two yards on the lakes outside of those of the American Shipbuilding Company—the Davidson yards at Bay City, which make wooden vessels principally, and the Craig yards at Toledo, which have not the facilities for building big boats. There is another handicap, too, in the scarcity of steel. The American Company, though, through its association with the Carnegie interests will not feel this, as contracts accepted by it are based on the buyer's promise to supply the steel.

"Yesterday the Carnegie people purchased the big steamer 'C. A. Black,' and while that deal was being closed here Henry W. Oliver at Pittsburg closed contracts for two more big steel ships. The contract with the shipbuilding company means that during the next year big additions will be made to the Carnegie fleet, and, with its carrying contracts with Rockefeller, the two interests will be able to move more of the output of the mines they control, some 8,500,000 tons, without the aid of outside vessels."

By Telegraph.

(From Our Special Correspondent.)

Republic, Wash., October 19th.—The No. 4 tunnel at the Republic Mine at 2,225 ft. in from the portal and at a depth of 600 ft. below surface has cross-cut a quartz vein 27 ft. wide. The assays from this vein, according to the management, are very satisfactory. Drifting has started north and south. I am informed by what I consider good authority that the south drift is in 10 ft. and the ore in the breast assays from $7 to $350 per ton in gold.

## MINING STOCKS.

Complete quotations will be found on pages 506, 507 and 508 of mining stocks listed and dealt in at:

| | | |
|---|---|---|
| Baltimore, | Philadelphia, | Mexico, |
| Boston. | Spokane. | Paris. |
| Colo. Springs. | Salt Lake. | Rossland. |
| Denver. | San Francisco, | Toronto. |
| New York. | London. | Valparaiso. |

### New York. Oct.. 20

This market is very quiet, and the higher-priced securities have sagged. In the copper group Amalgamated dropped 2¼ points, being bid down to $87 on Wednesday on light trading. Anaconda, after selling at $49 on Saturday last receded to $47¼ this week, but at the close is again higher. Tennessee lost several points, selling at $15½; but at the close the stock is stronger. Union of North Carolina was steady at $30@$32.

American Smelting and Refining common touched $35—the lowest since July last—but recovered to $36@$36¼, while the preferred shares were firm at $87. Sloss-Sheffield Steel common was weak, selling at $39, but the preferred stock was steady at $78½@$79½, and subscriptions at $138@$140. Flemington Coal and Coke was active, and sales of about 1,000 shares were reported on Wednesday at $29@$29⅝. The stock has recently been listed on the Montreal Exchange.

Homestake, of South Dakota, which will pay the usual monthly dividend of $105,000 on the 25th, is held at $75 against $72 bid.

In the Colorado section the Cripple Creeks are well maintained, especially as the dividends paid during the ten months ending October 31st amounted to $2,410,750. Isabella sold at 95@97c.; Mt. Rosa at 38@40c.; Work at 33c.; and Jack Pot at 67c., while the higher-priced stocks were practically unchanged. In the other Colorado stocks business was dull. Breece was held at $1.55. Small Hopes was quoted at $1, and Iron Silver brought 55c. The Comstock group were dull as usual.

Ontario of Utah sold at $7.62½. In the California stocks, Brunswick sold at 28c., while Standard was firm around $3.

### Boston. Oct. 19.

(From Our Special Correspondent.)

We have not had a brilliant market this week, and the liquidation in mining stocks has continued most of the time. A general desire to unload was manifest, with the usual consequences. Insiders showed very little disposition to support prices, and, indeed, the movement was rather too strong for them, if they had tried.

To-day there was some check to the general liquidation in the copper stocks and the market showed a slightly better tone, but this did not produce any improvement in prices. Of the dividend payers Calumet & Hecla sold for $750; Tamarack, $212; Osceola, $80½; Wolverine, $40; Atlantic, $29. In the newer and speculative coppers Isle Royale brought $47½; Copper Range, $35; United States, $29¾; Old Dominion, $29½; Centennial, $23; Mohawk, $19; Franklin, $17; Santa Fe, $11; Michigan, $10; Arnold, $9; Trimountain, $8; Winona, $8; Old Colony, $7; Adventure, $6½; Victoria, $4½; Allouez, $4@$4½. In the blind pool group Amalgamated Copper itself sold at $87, while Boston & Montana was quoted at $338; Butte & Boston, $65; Parrot, $42½; Arcadian, $39½.

Outside of the copper specials prices were no lower, American Zinc selling at $48; Utah Consolidated, $35½; Gold Dredging, $22; Cochita, $17½.

In the miscellaneous stocks United States Oil was quoted at $43½, while Dominion Coal common brought $43; Agricultural Chemical $39½ for the common and $79 for the preferred; Central Oil, $24.

### Salt Lake City. Oct. 14.

(From Our Special Correspondent.)

Centennial-Eureka hereafter will cut no figure in this market, and about the middle of November the new shares will be listed in Boston. Chloride Point is lower and in less favor. Daisy remains a knotty problem. The mill has made no profit for 2 months and the outlook is not over bright.

Daly rules about unchanged. Daly-West hangs around $13, notwithstanding the semi-authoritative statement that $13.33 will be paid for all sizable blocks. There are straws indicating a movement to depress these shares. Homestake drops; it seems to be deserted by its friends. No report was made public by Horn Silver's annual meeting, and the shares here are inert.

Mammoth is selling around $3.50—the high point for several years. President McIntyre admitted that there was an option out on his holdings, presumably at $4, on which a payment was due October 11th. This was not forthcoming and the shares eased off. At the close the stock was an offering at $2.87½ with but slight demand. Mercur's quarterly $50,000 dividend will be paid October 20th. The Woodmansee lease on Sunbeam has expired and all the ground is now in the company's possession. Silver King paid the customary $50,000 dividend October 10th.

### San Francisco. Oct. 14.

(From Our Special Correspondent.)

The market has shown very little variation from its usual course during the week. The business has been moderate only, while prices were weak and not well sustained, the tendency being downward. There has been no special news to affect stocks.

Some quotations noted are: Consolidated California & Virginia, $1.65; Ophir, 87c.; Sierra Nevada, 63c.; Potosi, 59c.; Challar, 38c.; Best & Belcher, 35c.; Mexican, 29c.; Hale & Norcross, 25c. There was no business outside of the Comstocks.

The following mining companies report having had coin on hand October 1st, 1899, with all expenses paid to that date, unless otherwise stated: Alpha Consolidated, $3,407; Alta, $190, with $1,000 due the bank; Andes, $432.98, and an assessment being collected; Best & Belcher, $454, with September expenses at the mine unpaid, and an assessment being collected; Bullion, $1,169, and an assessment being collected; Caledonia, $4,496; Challar, $11,155; Challenge Consolidated, $2,863; Consolidated Imperial, $394; Consolidated California & Virginia, $4,815, with September expenses partly paid, $4,000 due the bank and an assessment being collected; Confidence, $1,979, with September expenses unpaid; Crown Point, $2,865, with September expenses at mine estimated at $605 unpaid; Consolidated New York, $175; Exchequer, $165; Gould & Curry, $8,-191, with an assessment being collected; Hale and Norcross, $90, with liabilities of $1,755 and an assessment being collected; Julia Consolidated, $890; Justice, $1,130, with statement of mine expenses not yet received; Mexican, $356; Ophir, $1,837; Overman, $5,807, with September mine expenses unpaid and an assessment being collected; Potosi, $11,424, and an assessment being collected; Scorpion, $30; Savage, $6,511; Segregated Belcher, $738, with an assessment being collected; Silver Hill, $175; Sierra Nevada, $6,173; Standard Consolidated, $131,304, with statements of September bullion clean-up and expenses to be received; Syndicate, $1,643; Union Consolidated, $12,518; Utah Consolidated, $2,369.

### London, England. Oct. 4.

(From Our Special Correspondent.)

The South African market has been inclined to be slumpy this week, chiefly on account of several irrepressible professional speculators not being able to meet their differences. Quotations tend to recede on the near approach of war, but are subject to considerable temporary fluctuations as one rumor or another is put afloat on the Stock Exchange. The business done is not of a very high class, though the uninitiated might be deceived by its apparent genuineness. As a matter of fact the great leaders of the market are simply sitting tight and doing their utmost to prevent public selling. The transfer departments at the leading companies' offices are not very busy, which in itself is a proof that real transactions are few. The only question which troubles the shareholder is the prospective damage to mines and plants, arising either from disuse or Boer vengeance; and consequently they are all urging the Government to go ahead and get the hostilities over as soon as possible. The Government, however, happens not to be at the beck and call of the millionaires or the gold party, as its many critics, domestic and foreign, allege it to be, so that military operations do not go so fast as the shareholders would desire. The market at the time of writing is in suspense, as news does not come now from Johannesburg.

Other sections of the mining market are depressed in sympathy with South Africans, and owing to the uncertainty and irregularity of the money market no one attempts to induce the public to subscribe to new mining ventures. Mr. Whitaker Wright's new company which is to be formed to acquire nickel properties in New Caledonia is ready for flotation, but as his clients are all speculators, not investors, he considers the present an inopportune time to bring it out.

War or no war, there are always genuine investors who are on the lookout for new propositions that have substantial cause for existence, so there is no reason for delaying the flotation of the Weardale Steel, Coal and Coke Company, which has taken place this week. This company is one of the leading producers of coal, coke, pig and finished iron in the North of England, and the "Weardale" brand of steel boiler plates is a household word in England. It was established in 1845 and continued in private hands until recently, when it was acquired from the heirs of the original owners by Sir Christopher Furness, who is now floating it as a limited company. The capital is £500,000 in 6% preference shares, £400,000 in deferred shares and £400,000 in 4% debentures; the preference shares first take 6% then the deferred 6%, after which the surplus profits are divided equally between the two classes of shares. The purchase price is £1,025,000, partly in cash and partly in shares at the option of the vendor, Sir Christopher Furness, but the exact proportion is not specified. This price is provided for by the offer of £225,000 of deferred, £500,000 of preferred and £300,000 of debentures, while the remainder of the nominal capital is held in reserve for future issue. As the working capital of the old company was £350,000, it is not considered necessary to raise any more by creation of additional shares or sale of shares now held in reserve. Sir Christopher Furness is one of the leading commercial men of the day, and has rapidly come to the front at an early age solely by his own exertions and enterprise. He owns a splendid fleet of modern cargo steamers, he is a shipbuilder and marine engine maker and now he has acquired this great coal and iron producing business. In a different line of trade he reminds one of Sir Thomas Lipton. Perhaps he might have challenged for the "America" cup before now, if building boats had only been his pleasure and recreation instead of his everyday business.

At the time of writing we have just received Mr. Kruger's remarkable ultimatum, and nobody is thinking of investments or speculation of any kind. The South African shares do not exhibit any appreciable falls, and the prices are pretty much the same as a fortnight ago. On one or two days this week the professional bears became too much in evidence, so the controllers of the market came in and squeezed them out by buying largely. The tip is being sent round assiduously to buy South Africans now, as they will not go any lower and will surely rise after the war. In this way the market is well supported and very few signs of weakness are visible. Most of the mines appear to be shut down, though some half dozen are being worked by the Government engineers. No doubt the output will be pocketed by the Boers in one way or the other, just as they treated last week's consignment that was being forwarded to England. Shareholders will suffer considerably by loss of gold and by the disuse of the mines and plant, but they all hold on manfully.

### Paris. Oct. 8.

(From Our Special Correspondent.)

The market is again somewhat agitated, this time chiefly by the high rates charged to borrowers, which naturally affect speculation unfavorably. The money market is in a condition of doubt, and there is a general limitation of loans, which is, perhaps, salutary.

The Societe des Mines de Malfidano reports for its fiscal year ending with May a production from its mines in Sardinia of a total of 60,289 metric tons of zinc ore—calcined calamine and blende—and 1,641 tons lead ore. This is an increase of 3,278 tons, or 5.8%, in zinc ore and of 767 tons, or 87.8%, in lead ore. The average tenor of the zinc ore in metal was somewhat higher last year than in 1897-98. The company has been benefited by the increase in the prices of zinc.

A serious strike, by which 10,000 men are standing idle, has taken place at the Creusot Works. The pretext was the dismissal of two workmen for acts committed outside the establishment. The real motive is, however, the refusal of the directors to recognize the right of the secretary-general of the workmen's union to represent the men in discussions or negotiations with the company, he not being employed by the firm. The company does not object to the union, and is always ready to receive deputations of the men to defend their interests, but will not tolerate the intervention of an outsider to create discord between the company and its workers. The strike has now lasted some time, and will cause inconvenience, as the company has heavy contracts for the Exposition buildings, besides others for ships, ordnance and other work.

M. A. de Foville, director of the Paris Mint, in his report for 1898, speaks of the progress made during the year in carrying out the provisions of the Convention of October, 1897, by which the States of the Latin Union were authorized to increase the amount of their coinage of token silver. The increase in the case of France was 130,000,000 fr., of which, however, it was stipulated that all but 3,000,000 fr. should be coined out of silver obtained through the melting down of existing 5-franc pieces. This operation, it was foreseen, would result in a small profit to the Government, as the fineness of the new token coins is a little lower than that of the larger pieces. And M. de Foville now reports that during the year 40,000,000 fr. of the new token coins were fabricated out of silver obtained through the melting down of 5-franc pieces to the face value of 37,275,000 fr., and that allowing for the expense of recoinage, there was a gain on the operation of just a little under 2,075,000 fr. M. de Foville also gives some details of the silver coinage which the French Mint has been executing for the Russian Government during the past three years. That has now been completed, and altogether the new coins minted have outnumbered 82,000,000, in pieces of one, one-half, and one-quarter roubles, their total nominal value being 47,500,000 roubles.

Bids for the sale of 30,000 kgs. of silver to the French Mint for coinage purposes were opened in September. The contract was awarded to Allard & Cie., of Paris and Bruxelles, the price not being made public. The Mint is now supplied for some time to come.

# STOCK QUOTATIONS.

## NEW YORK.

| Name of Company | Location. | Par val. | Oct. 13. H. | Oct. 13. L. | Oct. 14. H. | Oct. 14. L. | Oct. 16. H. | Oct. 16. L. | Oct. 17. H. | Oct. 17. L. | Oct. 18. H. | Oct. 18. L. | Oct. 19. H. | Oct. 19. L. | Sales |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Adams | Colo. | $10 | .10 | ..... | .13 | ..... | .10 | ..... | .12 | ..... | .12 | ..... | ..... | ..... | ..... |
| Alamo | " | 1 | .08 | ..... | .08 | ..... | .08 | ..... | .09 | ..... | .09 | ..... | .09¼ | ..... | 3,500 |
| Alice | Mont. | 5 | .70 | ..... | .70 | ..... | .65 | ..... | .60 | ..... | .60 | ..... | ..... | ..... | 600 |
| Amalgamated C | Mont. | † 10 | 89.63 | 89.25 | 89.75 | 89.00 | 88.25 | 88.13 | 87.75 | 87.25 | 88.75 | 88.25 | 87.38 | ..... | ..... |
| Anaconda, c | Mont. | 25 | 48 50 | 47 63 | 49.00 | 48.00 | 48.75 | 47.75 | 48.38 | 48.00 | 48.25 | 47 25 | 47.88 | ..... | 8,185 |
| Anaconda Gold | Colo. | 5 | .45 | ..... | .44 | ..... | .43 | ..... | .43 | ..... | .44 | ..... | .44¼ | ..... | 1,500 |
| AnchoriaLel | " | 1 | .69 | ..... | .70 | ..... | .70 | ..... | .74½ | ..... | .76¾ | ..... | ..... | ..... | ..... |
| Argentum-Jun. | Colo. | 2 | .24 | ..... | .23 | ..... | .24 | ..... | .24 | ..... | .24 | ..... | ..... | ..... | 200 |
| Belcher | Nev. | 3 | .22 | ..... | .22 | ..... | .20 | ..... | .0 | ..... | .18 | ..... | ..... | ..... | ..... |
| Best & Belcher | " | 3 | .33 | ..... | .33 | ..... | .30 | ..... | .30 | ..... | .30 | ..... | ..... | ..... | ..... |
| Breece | Colo. | 25 | ..... | ..... | 1.55 | ..... | 1.55 | ..... | 1.55 | ..... | 1.55 | ..... | ..... | ..... | ..... |
| Brit.Col.Copper | B. C. | 10 | 11.75 | 11.50 | 11.50 | 10.00 | 11.50 | 10.50 | 11 50 | 10.50 | 11.50 | 10.50 | 11.25 | 11.50 | ..... |
| Brunswick | Cal. | 1 | .28 | ..... | .28 | ..... | .28 | ..... | .28 | ..... | .28 | ..... | ..... | ..... | 300 |
| Catalpa | Colo. | 10 | ..... | ..... | .20 | ..... | .20 | ..... | .20 | ..... | .20 | ..... | ..... | ..... | ..... |
| Cholar | Nev. | 3 | .35 | ..... | .35 | ..... | .35 | ..... | .34 | ..... | .28 | ..... | ..... | ..... | ..... |
| Comst'k T., st's | " | 100 | .04 | ..... | .03 | ..... | .03 | ..... | .04 | ..... | .03 | ..... | ..... | ..... | ..... |
| do. bonds | " | 100 | .04 | ..... | .04 | ..... | .03 | ..... | .04 | ..... | .03 | ..... | ..... | ..... | ..... |
| Con. Cal. & Va. | " | 2½ | 1 85 | ..... | 1.55 | 1.70 | 1.75 | ..... | 1.60 | ..... | 1.55 | ..... | ..... | ..... | 725 |
| Cr. & Cr. Creek | Colo. | 1 | .11 | ..... | .10 | ..... | .11 | ..... | .10 | ..... | .10 | ..... | ..... | ..... | 1,500 |
| Crescent | " | 10 | ..... | ..... | .15 | ..... | .15 | ..... | .15 | ..... | .15 | ..... | ..... | ..... | ..... |
| Cripple Cr. Con. | " | 1 | .15 | ..... | .16 | ..... | .15 | ..... | .15 | ..... | .17 | .16 | .16¼ | .16 | 2,600 |
| Crown Point | Nev. | 3 | .15 | ..... | .15 | ..... | ..... | ..... | .15 | ..... | .12 | ..... | ..... | ..... | ..... |
| Deadw'd Terra. | S.Dak | ..... | .60 | ..... | .70 | ..... | .70 | ..... | .70 | ..... | .70 | ..... | ..... | ..... | ..... |
| Elkton | Colo. | 1 | 1.10 | ..... | 1.17 | ..... | 1.141 | ..... | 1.183 | ..... | 1.20 | ..... | 1.18¾ | ..... | 500 |
| Eureka | Nev. | 20 | .25 | ..... | .20 | ..... | .25 | ..... | .25 | ..... | .25 | ..... | ..... | ..... | 725 |
| Father de Smet | Dak. | 100 | .10 | ..... | .10 | ..... | .10 | ..... | .10 | ..... | .10 | ..... | ..... | ..... | 1,500 |
| Findley | Colo. | 1 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Garf Con | " | 1 | .16¾ | ..... | .17 | ..... | .18 | ..... | .18 | ..... | .18 | ..... | .19 | .18¾ | 3,600 |
| Gold Coin C.Ck | " | 1 | 2 10 | ..... | 2.10 | ..... | 2.05 | ..... | 2.10 | ..... | 2.10 | ..... | ..... | ..... | ..... |
| Golden Fleece | " | 1 | .25 | ..... | .26 | ..... | .27 | ..... | 26½ | ..... | .24 | ..... | .30 | .28½ | 400 |
| Gould & Curry | Nev. | 3 | .33 | ..... | .32 | ..... | .35 | ..... | .33 | ..... | .30 | ..... | ..... | ..... | ..... |
| Hale&Norcross | Nev. | 3 | .32 | ..... | .34 | ..... | .34 | ..... | .45 | .40 | .36 | ..... | ..... | ..... | 900 |
| Homestake | S.Dak | 100 | 65.00 | ..... | 65 00 | ..... | 61.00 | ..... | 65.00 | ..... | 65.00 | ..... | ..... | ..... | ..... |
| Horn Silver | Utah. | 25 | 1.20 | ..... | 1.35 | ..... | 1.20 | ..... | 1.25 | ..... | 1.20 | ..... | ..... | ..... | ..... |
| Iron Silver | Colo. | 20 | .53 | ..... | .53 | ..... | .53 | ..... | ..... | ..... | .52 | ..... | ..... | ..... | 200 |
| Isabella | " | 1 | .90 | ..... | .92 | ..... | .97 | .96 | .95 | ..... | 91½ | ..... | .93 | .91 | 1,600 |
| Jack Pot | " | 1 | .63 | ..... | .64 | ..... | .64 | ..... | .64 | ..... | .67 | ..... | ..... | ..... | 500 |
| Jefferson | " | 1 | .14 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| King & Pemb. | Ont. | 10 | ..... | ..... | .18 | ..... | .18 | ..... | .18 | ..... | .18 | ..... | ..... | ..... | ..... |
| Lacrosse | Colo. | 10 | .16 | ..... | .16 | ..... | .16 | ..... | .14 | ..... | .14 | ..... | ..... | ..... | ..... |
| Leadville Con. | " | 10 | .09 | ..... | .09 | ..... | .09 | ..... | .08 | ..... | .09 | ..... | ..... | ..... | ..... |
| Little Chief | " | 50 | .19 | ..... | .18 | ..... | .18 | ..... | .18 | ..... | .25 | ..... | ..... | ..... | ..... |
| Mexican | Nev. | 3 | .32 | ..... | .33 | ..... | .35 | ..... | .34 | ..... | .25 | ..... | ..... | ..... | 300 |
| Mollie Gibson | Colo. | 5 | .24 | ..... | .24 | ..... | .24 | ..... | .24 | ..... | .24 | ..... | .30 | .27 | 1,700 |
| Morenci Cop.pf | " | 1 | 1.81 | ..... | 1.85 | ..... | 1.835 | ..... | 1.805 | ..... | 1.75 | ..... | 1.78 | 1.77 | 600 |
| Moulton | Mont. | 25 | .24 | ..... | .30 | ..... | .30 | ..... | .30 | ..... | .35 | ..... | ..... | ..... | ..... |
| Mt. Ross | Colo. | 1 | .35 | ..... | .39¾ | ..... | .40 | .38 | .38 | ..... | .37 | ..... | .40 | ..... | 2,100 |
| Occidental | Nev. | 3 | .15 | ..... | .16 | ..... | .15 | ..... | .15 | ..... | .15 | ..... | ..... | ..... | ..... |
| Ontario | Utah. | 10 | 8.00 | ..... | 7.75 | ..... | 8.00 | ..... | 7 62½ | ..... | 7.75 | ..... | ..... | ..... | 20 |
| Ophir | Nev. | 3 | .83 | ..... | .80 | ..... | .84 | ..... | .90 | ..... | .78 | ..... | ..... | ..... | ..... |
| Pharmacist | Colo. | 1 | .07 | ..... | .07 | ..... | .07 | ..... | .08 | ..... | .07 | ..... | ..... | ..... | 6,000 |
| Phœnix | Ariz. | 1 | .16 | .13 | .15 | .13 | .16 | .13 | .16 | .15 | .17 | .16 | ..... | ..... | 56,200 |
| Pinnacle | Colo. | 1 | ..... | ..... | .31 | ..... | .30 | ..... | .30 | ..... | .30 | ..... | ..... | ..... | 1,000 |
| Plymouth Con. | Cal. | 10 | .08 | ..... | .08 | ..... | .08 | ..... | .08 | ..... | .08 | ..... | ..... | ..... | ..... |
| Portland | Colo. | 1 | 2.20 | ..... | 2.31 | ..... | 2.35 | ..... | 2.35 | ..... | 2.39 | ..... | 2.50 | 2.35 | ..... |
| Potosi | Nev. | 3 | .58 | ..... | .65 | ..... | .62 | ..... | .62 | ..... | .45 | ..... | ..... | ..... | 700 |
| Quicksilver | Cal. | 100 | ..... | ..... | 1.50 | ..... | 1.50 | ..... | 1.50 | ..... | 1.50 | ..... | ..... | ..... | ..... |
| do. pref. | " | 100 | ..... | ..... | 7.00 | ..... | 6.50 | ..... | 6.50 | ..... | 6 50 | ..... | ..... | ..... | ..... |
| Savage | Nev. | 2½ | .24 | ..... | .20 | ..... | .22 | ..... | .22 | ..... | .20 | ..... | ..... | ..... | 500 |
| Sierra Nevada | " | 5 | .60 | ..... | .65 | ..... | .61 | ..... | .6 | ..... | .64 | ..... | ..... | ..... | ..... |
| Small Hopes | Colo. | 20 | 1.15 | ..... | 1.00 | ..... | 1.10 | ..... | 1.05 | ..... | 1.00 | ..... | ..... | ..... | ..... |
| Specimen | " | 1 | .10 | ..... | .14 | ..... | .09 | ..... | .09 | ..... | .09 | ..... | ..... | ..... | ..... |
| Standard Con. | Cal. | 1 | 3.10 | ..... | 3 01 | ..... | 3.00 | ..... | 2.9 | ..... | 3.00 | ..... | ..... | ..... | ..... |
| Tenn Copper | Tenn | 25 | 17.50 | 17.00 | 17.0 | 15.50 | 17.00 | 15.50 | 17 00 | 15.50 | 17.00 | 16.00 | ..... | ..... | ..... |
| Tornado | Colo. | 1 | ..... | ..... | 45 | ..... | ..... | ..... | ..... | ..... | .45 | ..... | ..... | ..... | 500 |
| Union | " | 1 | .31 | ..... | .35 | ..... | .32¾ | .29 | .32 | .30 | .33 | ..... | ..... | ..... | 1,000 |
| Union Con. | Nev. | 2½ | .5 | ..... | .34 | ..... | .34 | ..... | .25 | ..... | .31 | ..... | .35 | .32 | ..... |
| Utah Con. | " | 5 | .10 | ..... | .10 | ..... | .10 | ..... | .13 | ..... | .10 | ..... | ..... | ..... | 1,000 |
| Work | Colo. | 1 | .35 | ..... | .30 | ..... | .30 | ..... | .33 | ..... | .33 | ..... | .34 | .32¼ | 2,300 |
| Yellow Jacket | Nev. | 3 | .25 | ..... | .28 | ..... | .25 | ..... | .25 | ..... | .23 | ..... | ..... | ..... | ..... |

## COAL AND INDUSTRIAL STOCKS.

| | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Am. Sm. & Ref. | ..... | $100 | 37 | 36½ | 36¼ | ... | 36¾ | 35⅝ | 36 | 35 | 36¼ | 35 | ..... | ..... | 3,950 |
| " " " pf | ..... | 100 | 87¾ | ..... | 87 | ..... | 86¾ | 87 | ..... | ..... | ..... | ..... | 87½ | ..... | 4,975 |
| Am.S &W Co n | ..... | 100 | 5.⅜ | 51¾ | 51¾ | 51¼ | 52¾ | 5.⅜ | 52⅜ | 50 | 52 | 50¼ | 51⅜ | ..... | 28,70 |
| " " pf'r n | ..... | 100 | 95¾ | 94¾ | 95 | ..... | 96 | ..... | 96¼ | 94½ | 96 | ..... | 96 | ..... | 4,1⅛ |
| Central of N. J. | N. J. | 100 | 113⅜ | 118 | 118 | 117½ | ..... | 118 | ..... | ..... | 119⅝ | 118¾ | 119¾ | ..... | 3,530 |
| Col. G. & I. Dev | Colo. | 100 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Col. Fuel & I. | Colo. | 100 | 54⅜ | 53 | 53⅜ | 55 | 55½ | 32½ | 55¼ | 53⅜ | 54½ | 54½ | 55¾ | .. | 10,835 |
| " pf. | " | 100 | ..... | ..... | ..... | ..... | 122¾ | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 100 |
| Col. & H.C.& I. | Ohio. | 100 | 17⅜ | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 18¼ | ..... | 18 | ..... | 400 |
| Del. & Hud | N. Y. | 100 | 121½ | 121 | 121 | 119 | 120¼ | 120 | 12⅞ | 120¾ | 122⅜ | 121¼ | 121¼ | ..... | 4,945 |
| Federal Steel | " | 100 | 84⅜ | 83⅜ | 83⅜ | 83 | 84¾ | 83¼ | 83⅝ | 82¾ | 84¼ | 83 | 84⅜ | ..... | 41,450 |
| " " pf | " | 100 | 78 | 76⅜ | 77⅜ | 76 | 77¾ | ..... | 77¾ | 77 | 78 | 76¾ | 78¾ | ..... | 5,298 |
| National Lead | N. Y. | 100 | 30¾ | 29 | 29⅜ | 29 | ..... | ..... | ..... | ..... | 29¾ | ..... | 29¾ | ..... | 1,820 |
| " " pf | Md. | 100 | ..... | ..... | 114¾ | ..... | 110⅜ | ..... | ..... | ..... | 110¾ | ..... | 109¾ | ..... | 606 |
| National Salt | ..... | 100 | 47 | 46 | 47 | 46 | 46¾ | 45¾ | 47 | 45 | 47 | 45 | 45¾ | 45 | ..... |
| " pf | ..... | 100 | ..... | ..... | 77 | 75 | 77 | 75 | 77 | 75 | 77 | 75 | 77 | 75¼ | 600 |
| N. Y., Ont. & W. | N. Y. | 100 | 24¼ | 24 | 24¼ | ..... | 24¼ | 24 | ..... | ..... | 24¾ | 24¾ | 24¾ | ..... | 5,845 |
| Reading, 1st pf. | Pa. | 100 | 57⅜ | 57 | 57⅜ | 56¼ | 57⅜ | 57 | 58 | 57¼ | 58⅛ | 57⅜ | 58¾ | ..... | 16,780 |
| " 2d pf. | " | 100 | 31¾ | 30¾ | ..... | ..... | ..... | ..... | 32¼ | ..... | 32¾ | 31¾ | 32¾ | ..... | 8,109 |
| Republic I. & S. | ..... | 100 | 27¾ | 27 | 27 | 26¾ | 27 | 26¼ | 26¾ | 26 | 26¾ | ..... | 26 | ..... | 6,650 |
| " pf | ..... | 100 | 72¾ | 71¼ | 72¾ | 71 | 71 | 70 | 71¾ | 70¾ | 71 | 70¾ | 70¾ | ..... | 2,750 |
| Tenn.C.,I.&R.R. | Ala. | 100 | 114¾ | 113¾ | 115 | 114 | 116¼ | 114¾ | 116⅝ | 115 | 116⅝ | 116 | 118⅜ | ..... | 6,985 |

† Ex-dividend.

## PHILADELPHIA, PA.

| Name of Company. | L'cation. | Par Val. | Oct 12. H. | Oct 12. L. | Oct. 13. H. | Oct. 13. L. | Oct. 14. H. | Oct. 14. L. | Oct. 16. H. | Oct. 16. L. | Oct. 17. H. | Oct. 17. L. | Oct. 18. H. | Oct. 18. L. | Sales |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Am. Alkali | ..... | ..... | 3.63 | ..... | ..... | ..... | 3 63 | 3.50 | 3.63 | 3.50 | 3.63 | ..... | 3.75 | 3.38 | 2,087 |
| " " pf. | ..... | ..... | ..... | ..... | 2.00 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 2.00 | ..... | 200 |
| Bethlehem Irn | Pa. | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 61.00 | ..... | 107 |
| Bethlehem St'l | " | $50 | 21.00 | ..... | 20.25 | 0.00 | 21.00 | ..... | 20.25 | ..... | ..... | ..... | 20 25 | 20.00 | 708 |
| Cambria Iron | " | 50 | ..... | ..... | ..... | ..... | 44.63 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 107 |
| Cambria Steel | I.T. | 50 | 26 75 | 26.50 | 26.50 | ..... | 26.63 | 26.25 | 26.50 | 26.25 | 26.75 | 26.50 | 26.63 | 26.50 | 2,529 |
| Choctaw, pref. | Pa. | 50 | 47.50 | ..... | ..... | ..... | 47.00 | ..... | ..... | ..... | ..... | ..... | 47.50 | ..... | 380 |
| Lehigh Val | " | 50 | 26.00 | ..... | 25.75 | ..... | 25 75 | ..... | 25.75 | 25.50 | 25.75 | 25.50 | 26 13 | 25.75 | 971 |
| Penna. R. R. | " | 50 | 65 63 | 65.25 | 65.63 | 65.13 | 65.38 | 65.25 | 65.50 | 65.13 | 65.50 | 65.00 | 65 88 | 65.50 | 2,9 2 |
| Susq I. & S. | " | ..... | 7.00 | 6.75 | 6.88 | ..... | ..... | ..... | 7.00 | 6.63 | 6.75 | 6 63 | 6.50 | 5.50 | 4,945 |
| United Gas I. | " | 50 | 163 | 162 | ..... | ..... | ..... | ..... | 161¾ | 160¾ | 162 | 161¾ | 162 | 161¾ | 1,815 |
| Welsb. of Can. | Can. | 100 | ..... | ..... | 2.00 | ..... | 2.10 | ..... | ..... | ..... | 2.00 | ..... | ..... | ..... | 435 |
| Welsb. Coml. | " | 100 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Welsb Light. | " | 100 | 49.25 | ..... | 49.25 | ..... | ..... | ..... | 49.00 | ..... | ..... | ..... | ..... | ..... | 125 |

Total shares sold, 17,116.

## VALPARAISO, CHILE.*

Sept. 9.

| Name of Company. | Location. | Capital paid. | Sh.Val. paid up. | Last Div'nd. Amt. | Last Div'nd. Date. | Prices. Bid. | Prices. Asked. | Prices. Last sale |
|---|---|---|---|---|---|---|---|---|
| Arturo Prat, silver | Chile | $8,300,000 | $100 | 4 p. c. | 1897 | 19 | 20 | 20 |
| Caracoles, silver | " | 315,000 | 100 | 10 " | 1894 | 5 | 20 | 7 |
| Huantajaya (mine) silver | " | 1,000,000 | 100 | 13 " | 1894 | ..... | ..... | ..... |
| Huanchaca, silver | Bolivia | 8,000,000 | 25 | 4 " | 1895 | 30 | 35 | 30 |
| Oruro, silver | Chile | 600,000 | 200 | ..... | ..... | 280 | 290 | 280 |
| Todos Santos, silver | " | 2,000,000 | 100 | 1 " | 1895 | 4 | 5 | 6 |
| Agua Santa nitrate | " | 2,000,000 | 50 | 5 " | 1898 | 161 | 165 | 161 |
| Antofagasta, nitrate | " | 2,000,000 | 200 | 3 " | 1898 | 100 | 100 | 100 |
| Soc. Internacional, nitrate | " | 1,600,000 | 60 | ..... | ..... | ..... | ..... | 5 |
| Union, nitrate | " | 5,000,000 | 200 | ..... | ..... | 65 | 70 | 72 |

* Special report of Jackson Bros. Values are in Chilean pesos or dollars.

## BOSTON, MASS.†

| Name of Company. | Par val. | No. of shares. | Oct. 12. H. | Oct. 12. L. | Oct. 13. H. | Oct. 13. L. | Oct. 14. H. | Oct. 14. L. | Oct. 16. H. | Oct. 16. L. | Oct. 17. H. | Oct. 17. L. | Oct. 18. H. | Oct. 18. L. | Sales |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Aetna, cons. g. | $5 | 100,000 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Adven'u'e,Cons | 25 | 100,000 | 7.00 | ..... | ..... | ..... | 7.00 | 6.00 | ..... | ..... | 6.50 | 6.00 | 6.50 | ..... | 250 |
| Alloues | 25 | 80,000 | 6 75 | 5 88 | ..... | ..... | 5 00 | 4 50 | 5.00 | 4.50 | 4 75 | 4 25 | 4.75 | 4.25 | 3,492 |
| *Am. Z., L. & S. | 25 | 60,000 | 54.00 | ..... | ..... | ..... | ..... | ..... | 50.00 | 48.00 | 49.00 | 48.00 | 48.00 | ..... | 1,220 |
| Anaconda | 25 | 1,200,000 | 49.75 | 49.00 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 48.00 | 47.50 | 135 |
| Arcadian, c. | 25 | 150,000 | 49.00 | ..... | 47.00 | ..... | 44 00 | 42.00 | 48.50 | 42.00 | 41.50 | 35 00 | 39 75 | 38.38 | 7,325 |
| Arnold, c. | 25 | 60,000 | ..... | ..... | 10.00 | ..... | 9.50 | 9.00 | 10.25 | 9.25 | 9.50 | ..... | 9.50 | 9.00 | 1,315 |
| Ashbed | 25 | 40,000 | ..... | ..... | ..... | ..... | 1 00 | ..... | 1 00 | ..... | 1.00 | ..... | ..... | ..... | 450 |
| Atlantic, c. | 25 | 40,000 | 28 00 | ..... | ..... | ..... | 28.00 | 26 50 | 28.50 | ..... | 28.00 | 27 00 | 27.00 | 26.38 | 550 |
| Baltic, c. | 25 | 100,000 | 24 00 | ..... | ..... | ..... | 23.50 | 23.00 | 24.00 | 23.00 | 23.00 | 22.00 | 24.13 | 22.00 | 2,501 |
| Bingham, c.&g. | 10 | 190,000 | 15.50 | 15.25 | 15.25 | 15.00 | ..... | ..... | 15 00 | 14 75 | 14.00 | ..... | 14.50 | 14.00 | 1,507 |
| Bonanza, g. | 10 | 300,000 | 1.75 | ..... | 4.50 | 1.50 | ..... | ..... | ..... | ..... | 1.50 | 1.38 | 1.50 | 1.25 | 3,995 |
| Boston | 2 | 200,000 | ..... | ..... | ..... | ..... | ..... | ..... | 6.00 | ..... | ..... | ..... | ..... | ..... | ..... |
| Boston & C. C. | 2 | 201,000 | .55 | .50 | .55 | .50 | .45 | ..... | .50 | .45 | ..... | ..... | ..... | ..... | 2,050 |
| Bos.&Mon,Tr.R | 25 | 150,000 | 360 | 354 | 355 | 350 | 350 | 345 | 350 | ..... | 345 | ..... | 345 | 338 | 714 |
| Breece | 25 | 200,000 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 2.50 | ..... | ..... | ..... | 200 |
| British Col. | 5 | 200,000 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 10 50 | ..... | 30 |
| Butte & Bost., c | 10 | 200,000 | 78.00 | 77.00 | 75.00 | ..... | 77 00 | 73.00 | 75.00 | ..... | 70.00 | 63.50 | 67.00 | 65.00 | 591 |
| Cal. & Hecla, c. | 25 | 100,000 | 775 | 770 | 765 | 760 | 770 | 760 | ..... | ..... | 760 | 750 | 750 | ..... | 209 |
| Catalpa, s. | 10 | 300,000 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 35 | ..... | 100 |
| Centennial, c. | 25 | 90,000 | 32 50 | 30.5. | 30 50 | 30.00 | 27.00 | 26.75 | 30.00 | 27 00 | 26 25 | 24.00 | 25 00 | 23 00 | 5,728 |
| Central Oil | 25 | 59,720 | 24 00 | 23 50 | 23.75 | ..... | ..... | ..... | 23.75 | 23.25 | 23.25 | 23.00 | 24 00 | 23 00 | 2,765 |
| Cochiti, g. | 10 | 150,000 | 17 50 | 17.00 | 17.00 | 16.50 | ..... | ..... | 16.75 | 16.0 | 17.00 | 16.25 | 17.25 | 16.75 | 5,268 |
| Copper Range | 25 | 100,000 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 35.13 | ..... | 35.0 | ..... | 475 |
| Dominion Coal | 100 | 150,000 | 45 25 | 44.00 | 44.25 | 41.50 | ..... | ..... | 44.00 | 43.00 | 44.00 | 43.50 | 43 50 | 43.00 | 4,134 |
| do. pref | 100 | 20,000 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 117 | ..... | 10 |
| Federal Steel | 100 | 464,843 | 54.25 | 54.00 | 54 00 | 53.50 | ..... | ..... | 53 75 | ..... | 54.50 | 52.75 | 54 13 | 53.00 | 2,986 |
| do. pref | 100 | 532,610 | 78.00 | ..... | 78 50 | 77.88 | ..... | ..... | 77.25 | ..... | 77.5. | 77.00 | 77.50 | ..... | 512 |
| Franklin, c. | 25 | 100,000 | 18 00 | 17.50 | 7.50 | ..... | 17.25 | 17.00 | 17 50 | 17.00 | 17.00 | ..... | 17.00 | ..... | 1,180 |
| Gold Coin, s. | 5 | 200,000 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Humboldt, c. | 25 | 40,000 | ..... | ..... | ..... | ..... | 2.00 | 1.75 | 1.75 | ..... | ..... | ..... | 1.75 | ..... | 60 |
| I. Royal Con. c. | 25 | 100,000 | 45.00 | 44.00 | 43 00 | 42.00 | 41.00 | 40.00 | 41.00 | ..... | 40 00 | 38.75 | 38.00 | 37.00 | 3,775 |
| Mass., Con. | 25 | 100 000 | 10 50 | 10.00 | 10.00 | ..... | ..... | ..... | 10.00 | ..... | 9.50 | ..... | ..... | ..... | 580 |
| Mayflower | 25 | 100,000 | 4.50 | ..... | 4.00 | ..... | ..... | ..... | ..... | ..... | 4.00 | ..... | ..... | ..... | 200 |
| Melones | 10 | 167,577 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 2.50 | ..... | ..... | ..... | 50 |
| Merced, g. | 15 | 100,000 | 11.00 | ..... | 11.00 | 10.50 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 175 |
| Michigan | 25 | 100,000 | ..... | ..... | 10.50 | ..... | ..... | ..... | 10.00 | ..... | ..... | ..... | 10.00 | ..... | 492 |
| Mohawk, c. | 25 | 100,000 | 21.00 | ..... | 22.00 | ..... | 21.00 | ..... | 21.00 | ..... | 20.00 | 19.50 | 21.00 | 19.00 | 685 |
| Naps | 7 | 100,000 | 11.00 | ..... | 10.88 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 150 |
| New Idria | 5 | 100,000 | ..... | ..... | 12.50 | 12.25 | ..... | ..... | 12.25 | ..... | ..... | ..... | ..... | ..... | 190 |
| N.A.Gold Dre'g | 10 | 100,000 | 24.50 | ..... | ..... | ..... | ..... | ..... | 23.75 | 23.25 | 23 25 | 22.25 | 22.25 | 22 00 | 1,850 |
| Old Colony, c. | 25 | 100,000 | 9.25 | ..... | 8.75 | ..... | 8 75 | 7.00 | ..... | ..... | 8 00 | 7.50 | 7.25 | 7 00 | 535 |
| Old Dominion,c | 25 | 150,000 | 32 00 | 31 50 | 31.00 | ..... | 29.50 | 29.00 | 30.00 | 29.00 | 29.00 | ..... | 30.00 | 29 00 | 2,705 |
| Osceola, c. | 25 | 95,000 | 85 00 | 84.50 | 84 00 | ..... | 81.50 | ..... | 83 50 | 81.50 | 82.25 | 81 00 | 81 00 | 80.25 | 845 |
| §Parrot, s o | 10 | 229,850 | 46.50 | 46.00 | 45.50 | 44.00 | 44.00 | ..... | 44.50 | 42.75 | 43.5. | 43 00 | 43 00 | 42.50 | 3,089 |
| Pioneer, g. | 10 | 100,000 | ..... | ..... | ..... | ..... | 3.00 | 2 75 | 3.00 | ..... | 2.50 | ..... | ..... | ..... | 160 |
| Quincy, c. | 25 | 100,000 | 158 | ..... | 155 | ..... | 155 | 153 | 153 | ..... | 153 | 152 | 151 | ..... | 231 |
| Rhode Island | 25 | 100,000 | 6.50 | ..... | 6.50 | 6.00 | 5 75 | 5 00 | 6.00 | 5.50 | 5.50 | ..... | 5 50 | ..... | 1,025 |
| Santa Fe, g. & c | 10 | 250,000 | 12.25 | 12.00 | 12 00 | 11.75 | 10 50 | ..... | 11 5. | 10 50 | 11 00 | 10.50 | 10.75 | 10.25 | 6,120 |
| San. Yeaxel, g. | 5 | 130,000 | ..... | ..... | 12 25 | ..... | 12 00 | ..... | 12 25 | ..... | 12 00 | ..... | 12.50 | 11.50 | 600 |
| Tamarack, c. | 25 | 60,000 | 221 | 220 | 220 | ..... | 215 | 210 | 210 | ..... | 213 | ..... | 212 | 2.03½ | 321 |
| Tecumseh, c. | 25 | 90,000 | ..... | ..... | 4.63 | 4.50 | ..... | ..... | 4.50 | 4 25 | ..... | ..... | ..... | ..... | 40 |
| Tri Mountain | 25 | 100,000 | ..... | ..... | ..... | ..... | ..... | ..... | 9.50 | 8.50 | 9.00 | 8.00 | 8.00 | 7.00 | 1,795 |
| Union C. L. | 25 | 90,000 | ..... | ..... | 5.50 | ..... | ..... | ..... | 6.00 | ..... | ..... | ..... | 5.00 | ..... | 315 |
| United States | 25 | 250,000 | 31.00 | 37.13 | 30.00 | 28.75 | 28.75 | ..... | 30.13 | 28.75 | 30.13 | 29.75 | 29.85 | 29.38 | 14,165 |
| U. S. Oil | 25 | 100,000 | 45.50 | 44 75 | 45.00 | 43 75 | ..... | ..... | 44.00 | 43.50 | 44 5. | 43 75 | 44.00 | 43.00 | 3,330 |
| Utah Cons,g &c | 5 | 300,000 | 38 00 | 35.50 | 37.0. | 35.25 | 35.00 | ..... | 35.00 | ..... | 35.25 | 34.00 | 35 50 | 35.00 | 7,217 |
| Victor | 5 | 200,000 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Victoria | 25 | 100,000 | 5 00 | ..... | 5 00 | ..... | ..... | ..... | ..... | ..... | 4.88 | 4.50 | 4 50 | 4.00 | 795 |
| Washington | 25 | 40,000 | 2.25 | ..... | ..... | ..... | ..... | ..... | 2.00 | .. | 1.88 | 1.75 | 2.00 | 1.69 | 2,940 |
| White Knob | 100 | 50,000 | 11 00 | ..... | ..... | ..... | ..... | ..... | 16.00 | .. | ..... | ..... | ..... | ..... | 110 |
| Winona, c. | 25 | 100,000 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 8 00 | ..... | 340 |
| Wolverine, c. | 25 | 60,000 | 42.50 | 41.00 | 42.00 | 40.50 | ..... | ..... | 41.00 | 40.13 | 41.25 | 40.25 | 40.00 | 39.88 | 1,371 |
| Wyandotte | 25 | 100,00 | 3.50 | 3.00 | ..... | ..... | ..... | ..... | 3.00 | ..... | 3.25 | 3.00 | 3.00 | 2.00 | 1,150 |

Official quotations Boston Stock Exchange. Total sales, 107,138.

## COLORADO SPRINGS, COLO.‡

| Name of Company. | Par val | Oct. 10. B. | Oct. 10. A. | Oct. 11. B. | Oct. 11. A. | Oct 12. B. | Oct 12. A. | Oct. 13. B. | Oct. 13. A. | Oct. 16. B. | Oct. 16. A. | Oct. 17. B. | Oct. 17. A. | Sales. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Alamo | $1 | .09½ | .10¼ | ..... | ..... | ..... | ..... | ..... | ..... | .09½ | 10 | .09¾ | .10 | 2,200 |
| Anaconda | 1 | .41 | 45 | ..... | ..... | ..... | .44¾ | .43 | .44½ | .45 | .45 | .45 | .45¼ | 5,500 |
| Arg'ntumJ | 1 | .25½ | 26 | .25½ | .25¾ | .25½ | ..... | .25¾ | .26 | .25¾ | .26 | .25½ | .26 | ..... |
| Cadillac | 1 | .02¾ | .03¼ | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 12,000 |
| C. C. Con | 1 | .16¼ | .17 | .16¾ | .16¾ | .15¾ | ..... | .15¾ | .16 | .15½ | .15¾ | 16 | .16½ | 15,500 |
| Dante | 1 | .20¾ | .21 | .20 | ..... | .19¾ | .20 | .19¾ | .20 | ..... | ..... | ..... | ..... | 27,500 |
| ElktonCon | 1 | 1 09 | ..... | 1 12 | ..... | 1.13 | 1 15 | 1.17 | 1.18 | 1.18¾ | 1.19 | 1.19½ | 1.20 | 4,700 |
| El Paso G. | 1 | .39½ | ..... | 40¾ | ..... | 42 | .42 | .41¾ | ..... | .41¾ | 42 | .42 | .41¾ | 3,000 |
| Favorite | 1 | .05¼ | .06 | ..... | 06 | ..... | .6 | .05¾ | .06 | ..... | ..... | ..... | ..... | 2,000 |
| Findley | 1 | .16¾ | .17½ | .17 | .17¾ | 16¾ | .17½ | .17 | .17¾ | .17½ | .18 | .17½ | .18 | 1,000 |
| Golden Fl. | 1 | .32 | .33 | .26¾ | ..... | .26¾ | .30 | .26 | .30 | .26 | .30 | ..... | ..... | ..... |
| Gold Hill | 1 | .02¾ | .03 | ..... | .02¾ | .03¼ | .0.3¾ | .03¾ | ..... | ..... | ..... | ..... | ..... | 14,000 |
| Ing. Con | 1 | ..... | 11¼ | 10¾ | 10¾

# STOCK QUOTATIONS.

## DENVER, COLO.‡

| Name of Company. | Par val. | Oct. 9 B. | Oct. 9 A. | Oct. 10 B. | Oct. 10 A. | Oct. 11. B. | Oct. 11. A. | Oct. 12. B. | Oct. 12. A. | Oct. 13. B. | Oct. 13. A. | Oct. 14. B. | Oct. 14. A. | Sales. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Mines:** | | | | | | | | | | | | | | |
| Anac'da G. | $5 | .44 | .49 | .44 | ..... | .44¾ | .45 | .44⅞ | .45 | .44⅞ | 45¾ | .48 | ..... | ..... |
| Arg. J. | 1 | ..... | ..... | .25½ | ..... | 25 | ..... | .25½ | .27½ | ..... | ..... | ..... | ..... | ..... |
| Bankers | 1 | .14½ | .15¾ | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| CrippleC.C. | 1 | ..... | .16½ | ..... | 17¾ | .16¾ | ..... | .16½ | .16¾ | .15¾ | .16¾ | ..... | .16¾ | 2,000 |
| Della S. | 1 | .02½ | ..... | .03⅜ | ..... | .03⅜ | .02⅝ | .02⅝ | .03 | .03⅝ | ..... | .02⅜ | ..... | 1 000 |
| Elkton Con | 1 | ..... | 1 08 | 1.09¼ | ..... | ..... | ..... | 1.13 | 1.16 | 1.16 | ..... | 1.19 | ..... | ..... |
| Findley | 1 | ..... | ..... | .17 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Garf. Con. | 1 | .17¾ | .19 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 1,000 |
| Gold Coin. | 1 | .02⅝ | .02¾ | .02¼ | .02⅝ | .02¼ | .0 ⅜ | .02⅝ | .02⅝ | .02½ | .02⅝ | .02¼ | ..... | 2,000 |
| Goldstone. | 1 | ..... | ..... | ..... | ..... | .17¾ | .18½ | .18⅝ | ..... | .17⅝ | .18⅝ | ..... | ..... | ..... |
| Indepnd'nc | 1 | .46 | ..... | .48 | ..... | .48 | 49 | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Ironcliad. | 1 | .06⅝ | ..... | ..... | .57 | .06¾ | ..... | .07¾ | ..... | .07 | ..... | ..... | ..... | 1,000 |
| Isabella. | 1 | .91¾ | ..... | 92¼ | .9 3⅝ | .93⅝ | ..... | .93 | .93 | .91¼ | ..... | .93 | .94 | 1,5 0 |
| Jack Pot. | 1 | ..... | ..... | .63⅝ | ..... | .61 | ..... | .66 | ..... | ..... | ..... | ..... | ..... | ..... |
| Jefferson. | 1 | ..... | ..... | ..... | ..... | .03⅜ | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 2,000 |
| Keystone | 1 | .04⅜ | ..... | .04¾ | ..... | .04⅜ | .04¼ | .05 | ..... | ..... | ..... | .04¾ | ..... | ..... |
| LosAngeles | 1 | .10⅜ | .10¼ | .09⅝ | .10¼ | ..... | .10⅜ | .09¾ | .10¼ | .09⅝ | .10¼ | .09⅝ | .10¼ | 8,000 |
| Mollie Gib. | 5 | ..... | .25½ | ..... | ..... | .26½ | ..... | .28 | .29¾ | .30 | ..... | .29 | ..... | ..... |
| NewZealnd | 1 | .50 | .55 | .49 | .60 | ..... | .53 | .48 | .52 | .48 | .52 | ..... | .60 | 1,000 |
| Ophir | 1 | .46½ | ..... | ..... | .50 | ..... | .50 | .46 | ..... | .45 | .49 | ..... | .50 | 1,000 |
| Pharmacist | 5 | .06½ | .06¾ | .07 | .07½ | ..... | ..... | .06¾ | ..... | ..... | .06¾ | ..... | ..... | ..... |
| Portland. | 1 | ..... | ..... | 2.25 | ..... | 2.26 | ..... | ..... | ..... | 2.42 | ..... | ..... | ..... | ..... |
| Specimen | 1 | ..... | .08½ | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Union Gold | 1 | ..... | .33 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Vindicator. | 1 | 1.40 | ... | ..... | ..... | 1.45 | ..... | ..... | 1.60 | ..... | ..... | ..... | ..... | 450 |
| Work | 1 | ..... | ..... | ..... | ..... | .31½ | ..... | .33 | ..... | .33 | .34 | .32½ | ..... | 700 |
| **Prosp'cts:** | | | | | | | | | | | | | | |
| C C Imp | 1 | ..... | .005 | ..... | ..... | .00 4 | .005 | .004 | .005 | ..... | ..... | .004 | .0 3½ | 7,000 |
| Illinois | 1 | ..... | ..... | ..... | .01 | .00 7½ | ..... | .005 | .01½ | .006 | .009 | ..... | .009 | ..... |
| Old Gold | 1 | .01½ | ..... | .01¼ | ..... | ..... | .01⅜ | .01¼ | .01⅜ | .01¾ | ..... | .01¾ | .0 3⅛ | ..... |
| Puritan | 1 | .01 | .01¼ | .01⅜ | ..... | .01⅛ | ..... | .01¼ | .01⅜ | .01¼ | .01¾ | .0 5⅜ | .01⅜ | 58,000 |
| **Miscell.:** | | | | | | | | | | | | | | |
| Acacia | 1 | .26¼ | ..... | 27 | .27⅜ | .26¼ | ..... | .26¼ | ..... | ..... | ..... | .26 | ..... | 1,000 |
| Alamo | 1 | .09½ | .10⅜ | ..... | .10 | ..... | ..... | .08⅜ | ..... | ..... | .10 | ..... | .10 | ..... |
| Aola | 1 | ..... | .05¾ | ..... | .04⅜ | ..... | .05 | .04⅝ | .05 | ..... | ..... | ..... | ..... | ..... |
| Battle Mt. | 1 | ..... | ..... | .3 1½ | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Bob Lee | 1 | .05½ | ..... | .0 9⅝ | .05¾ | .06¾ | .06⅝ | .06⅝ | ..... | .06¾ | ..... | .06⅜ | .07 | ..... |
| C. C. & M. | 1 | ..... | ..... | ..... | ..... | ..... | .11⅝ | .10⅝ | ..... | .17¾ | .18⅜ | ..... | ..... | ..... |
| De Beers | 1 | ..... | .01⅝ | ..... | ..... | ..... | ..... | .0 9 | .01⅜ | ..... | ..... | ..... | ..... | ..... |
| Des Moines | 1 | ..... | ..... | ..... | ..... | .05⅜ | ..... | .05 | .05½ | .05 | .05¾ | ..... | ..... | 18,000 |
| Favorite. | 1 | ..... | ..... | .05⅞ | ..... | .05⅜ | .06 | .05¾ | .06 | .05⅝ | .06¾ | ..... | ..... | ..... |
| G'ld'n Eagle | 1 | .50 | ..... | .50 | .70 | .50 | .55 | .47½ | .60 | .50 | .55 | .5 1 | .59 | ..... |
| Goldstone. | 1 | .02½ | .02⅝ | .02¼ | .02⅜ | .02¼ | .02⅝ | .02⅝ | .02⅝ | .02¼ | .02½ | .02¾ | ..... | 2,000 |
| Gr'nite Hill | 1 | ..... | .04 | ..... | ..... | ..... | ..... | .03⅝ | ..... | ..... | ..... | .03 | ..... | 10,0.0 |
| Mamet R. | 1 | .05½ | .05¾ | ..... | ..... | ..... | ..... | .05⅜ | .06 | ..... | ..... | .05⅝ | .06 | ..... |
| Mobile. | 1 | ..... | ..... | ..... | ..... | ..... | ..... | .04⅜ | ..... | ..... | ..... | ..... | ..... | ..... |
| Mt. Beauty. | 1 | ..... | ..... | .08⅝ | .09¼ | ..... | ..... | .09½ | ..... | .09 | ..... | ..... | .09¼ | 1,000 |
| Trachyte. | 1 | ..... | ..... | ..... | ..... | ..... | ..... | 08 | ..... | ..... | ..... | ..... | ..... | ..... |

‡ Official Quotations Denver Stock Exchange. Total sales, 118,650 shares.

## SAN FRANCISCO, CAL.

| Name of Company. | Location. | Par. value. | Oct. 12. | Oct. 13. | Oct. 14. | Oct. 16. | Oct. 17. | Oct. 18. |
|---|---|---|---|---|---|---|---|---|
| Alpha Con. | Nev. | 1.00 | .04 | .04 | .04 | .04 | .04 | .04 |
| Alta. | " | 2.00 | .04 | .03 | .06 | .04 | .06 | .05 |
| Andes. | " | 3 00 | .09 | .19 | .10 | .10 | .10 | .10 |
| Belcher. | " | 3 00 | .24 | .22 | .23 | .23 | .30 | .20 |
| Best & Belcher. | " | 3.00 | .35 | .34 | .36 | .35 | .32 | .31 |
| Bullion. | " | 1.00 | .04 | .04 | .04 | .04 | .04 | .04 |
| Caledonia | " | 3.00 | .71 | .68 | .70 | .75 | .68 | .68 |
| Challenge Con. | " | 3.00 | .31 | .29 | .29 | .29 | .27 | .27 |
| Chollar. | " | 3.00 | .39 | .38 | .38 | .37 | .31 | .31 |
| Confidence. | " | 3.00 | .85 | .83 | .85 | .80 | .80 | .82 |
| Con. California & Virginia. | " | 2.50 | 1 65 | 1.65 | 1.65 | 1.70 | 1.65 | 1.60 |
| Cons. Imperial. | " | 1.00 | .01 | .01 | .01 | .01 | .01 | .01 |
| Crown Point. | " | 3.00 | .16 | .15 | .17 | .16 | .15 | .15 |
| Gould & Curry. | " | 3.00 | .36 | .35 | .36 | .35 | .34 | .34 |
| Hale & Norcross. | " | 3.00 | .36 | .36 | .39 | .44 | .40 | .38 |
| Julia Con. | " | 1.00 | .03 | .03 | .03 | .03 | .03 | .03 |
| Justice. | " | 2.00 | .08 | .07 | .07 | .07 | .06 | .06 |
| Kentuck Con. | " | 1.00 | .03 | .03 | .03 | .03 | .03 | .03 |
| Mexican. | " | 3.00 | .29 | .29 | .31 | .29 | .28 | .27 |
| Occidental Con. | " | 3.00 | .20 | .21 | .20 | .18 | .18 | .17 |
| Ophir. | " | 3.00 | .87 | .86 | .89 | .87 | .82 | .81 |
| Overman. | " | 2.00 | .20 | .19 | .20 | .20 | .19 | .20 |
| Potosi. | " | 3.00 | .59 | .57 | .59 | .57 | .48 | .43 |
| Savage. | " | 2 50 | .25 | .24 | .25 | .25 | .23 | .22 |
| Seg. Belcher & M. | " | 2.00 | .02 | .05 | .03 | .03 | .03 | .03 |
| Sierra Nevada. | " | 3.00 | .63 | .65 | .67 | .64 | .61 | .6 |
| Standard. | Cal. | 10.00 | 3 05 | 3.05 | 3.05 | 3.00 | 3.10 | 3.10 |
| Union Con. | Nev. | 2.50 | .38 | .37 | .38 | .38 | .36 | .34 |
| Utah Con. | " | 1.00 | .11 | .11 | .11 | .11 | .11 | .11 |
| Yellow Jacket. | " | 3.00 | .27 | .27 | .28 | .28 | .26 | .27 |

Official telegraphic quotations of San Francisco Stock Exchange.

## TORONTO, ONT.*

| Name of Company. | Par val. | Oct. 10. B. | Oct. 10. A. | Oct. 11. B. | Oct. 11. A. | Oct. 12. B. | Oct. 12. A. | Oct. 13. B. | Oct. 13. A. | Oct. 14. B. | Oct. 14. A. | Oct. 16. B. | Oct. 16. A | Sales |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ontario: | | | | | | | | | | | | | | |
| Alice A. | $1 | .09 | .12 | .08 | .12 | .08 | .11 | .08 | .11 | .08¾ | .12 | .09 | .14 | ..... |
| Empress | 1 | .0 3⅝ | .04 | 03¾ | .04 | .02½ | .04 | .04½ | .04 | .08 | .04 | .03 | .04¼ | 500 |
| Golden Star | 1 | .30 | .33 | .27 | .33 | .27 | .29½ | .28½ | .30 | .25½ | .30 | .27 | .29½ | 20,00 |
| Saw Bill | 1 | .10 | .25 | .15 | .25 | .12 | .17 | .10 | .18 | .10 | .16 | .10 | .18 | 4,000 |
| British Col.: | | | | | | | | | | | | | | |
| Athabaska | 1 | .35 | .40 | .35 | .40 | .35 | .41 | .35 | .40 | .35 | .40 | .35 | .41 | 2,000 |
| Big Three | 1 | .14 | .18 | .14 | .17½ | .14 | .18 | .14 | .17 | .13¾ | .17 | .13 | .16 | 3,50 |
| Bran. & G C. | 1 | .24 | .3 | .25 | .20 | .24½ | .29 | .25 | .3 | .25 | .30 | .28 | .29 | 4,500 |
| Dardanelles | 1 | .10¾ | .13 | .10¾ | .12½ | .11 | .13 | .11 | .13 | .11 | .13 | .11 | .13 | 15,000 |
| Deer Park. | 1 | .03¾ | .04 | .03¾ | .04¾ | .03¼ | .14¾ | .03 | .04¾ | .03¾ | .04½ | .03 | .04¼ | 2,6 0 |
| Deer'l'INo.2 | 1 | .20 | .23 | .19½ | .24 | .19 | .21¾ | .19 | .21 | .21 | .22½ | .20 | .23 | 24,000 |
| Dundee | 1 | .12 | .15 | .12⅜ | 15 | .12 | 15 | .12 | 15 | .12¾ | .15 | .12 | .16 | 1,500 |
| Even'g Star | 1 | .08 | .11 | .07¼ | .10 | .07 | .10 | .07 | .10 | .06 | .08¾ | .08 | .09 | 19,500 |
| FairviewCp | 0 25 | .05¾ | .07 | .0 2½ | .07¾ | .03¾ | .07¾ | .05½ | .07 | .05 | .07 | .05 | .06¾ | 21,000 |
| Minnehaha. | 1 | .12 | .17 | .13 | .17 | .12 | .17 | .12 | .17 | .14¾ | .17 | .12 | .17 | 200 |
| Monte Crist | 1 | .04 | .06 | .04 | .06 | .03¼ | .06 | .04 | .05¼ | .04 | .05¾ | .04 | .06 | 3,360 |
| Morrison | 1 | .12 | .16 | .11 | .16¾ | .13½ | .16 | .12½ | .16¾ | .13¾ | .16 | .13 | .15 | 3,500 |
| Noble Five. | 1 | .20 | .26 | .20 | .25 | .21 | .52 | .20 | .25 | .22 | .26 | .20 | .20 | 10,000 |
| N'rt'n Belle. | 1 | .01¾ | .02¾ | .01½ | .02¾ | .01½ | .02¾ | .01½ | .02¾ | .01½ | .02¾ | .01¾ | .03 | 3 00 |
| Novelty. | 1 | .02¾ | .03¾ | .02¾ | .03¾ | .02¾ | .04 | .0 3¾ | .03¾ | .02¾ | .03¾ | .02¾ | .03¼ | 2,500 |
| Old Ir ne'es | 1 | 1 10 | 1.16 | 1.09 | 1 15 | 1 08 | 1.14 | 1.07 | 1.13 | 1.04 | 1.14 | 1 05 | 1. 5 | 2,700 |
| Rathmullen | 1 | .07¾ | .08¾ | .07 | .08¾ | .07½ | .09¼ | .06¾ | .08¼ | .07¼ | .08 | .07¼ | .08¾ | ..... |
| Republic | 1 | 1.17 | 1.20 | 1 17¼ | 1.20 | 1.14 | 1.20 | 1.12 | 1.18½ | 1.14 | 1.18 | 1.14 | 1.18 | 8,900 |
| St. Paul | 1 | .01 | .02 | 01 | .02 | 0 | .01¾ | .01 | .02 | ..... | .01 | .01 | .01¾ | 2,500 |
| Van Anda | 1 | .07¾ | 08¼ | .07¼ | .08¼ | .07¼ | .08 | .07 | .08 | 07 | .08¾ | .07¾ | .08¾ | 48,500 |
| Victory Tri. | 1 | .4¾ | .06 | .04 | .5½ | .04¼ | .08½ | .03 | .05¾ | .04¾ | .0 5¾ | .04¾ | .07 | 9,850 |
| Waterloo. | 0.10 | .10 | 12 | .10 | .11 | .10 | .12 | .10¾ | .11¾ | .10¾ | .11½ | .10¾ | .12 | 12,100 |
| White Bear. | 1 | .03¾ | .04 | 03¾ | .04 | .03 | .04 | .03¾ | .04 | .03¾ | .04 | .03¾ | .04 | 39,800 |
| Winnipeg. | 1 | .25 | .30 | .26 | .34 | .27 | .30 | .28½ | .31 | .28¾ | .30 | .29 | .30 | 27,500 |
| Wonderful. | 1 | .04¾ | .06 | .04½ | .05¾ | .04 | .06 | .01 | .06 | .04 | .05½ | .04 | .05 | ..... |
| Develop Co. | | | | | | | | | | | | | | |
| B.C.G F'lds | 1 | .03¾ | .04½ | .03⅜ | .04¼ | .03½ | .04¼ | .03¾ | .04½ | .03 | .04¼ | .03¾ | .04¾ | 11,000 |
| Can. G. F S. | 0 10 | .06 | 07 | 05 | .07 | .05 | .07 | .03 | .07¾ | .03¾ | .04¾ | .04¾ | .06¾ | 34,500 |
| Gold Hills | 1 | .05¾ | .06¼ | .05¾ | .06¼ | .05¼ | .06¾ | .05 | .07 | .05 | .06¼ | .05¼ | .07½ | 10,500 |

*Official quotations of the Standard and Toronto Mining and Industrial Exchanges. Total shares sold, 364,550.

## SALT LAKE CITY, UTAH.*

Oct. 14.

| Stocks.† | No. of shares | Par val. | Bid. | Asked. | Stocks.† | No. of shares. | Par val. | Bid. | Asked |
|---|---|---|---|---|---|---|---|---|---|
| Ajax | 300,000 | $10 | $0.70 | $1.40 | Homestake | 400,000 | $1 | $0.05 | $0 10 |
| Alice | 400,000 | 25 | .40 | 1.10 | Horn Silver | 400,000 | 25 | 1 00 | 1.50 |
| Anchor | 150,000 | 10 | .50 | ..... | Joe Bowers | 400,000 | 1 | .16¾ | ..... |
| Buckeye | 500,000 | 1 | ..... | ..... | Little Pittsburg | 400,000 | 5 | .08¾ | .14 |
| Bullion-Beck & Ch. | 100,000 | 10 | 3.70 | 3.87½ | Lower Mammoth | 150,000 | 1 | 21 | .22½ |
| Centennial Eureka | 30,000 | 50 | ..... | ..... | Mammoth | 400,000 | 5 | 2 70 | 2.87½ |
| Chloride Point | 300,000 | 1 | .28 | .40 | Mercur | 200,000 | 25 | 6 90 | 7.10 |
| Daisy | 500,000 | 5 | .18¾ | .19¼ | Northern Light | 400,000 | 5 | 15¾ | 18¾ |
| Dalton | 500,000 | 5 | ..... | ..... | Omaha | 300,000 | 2 | .14 | .17¾ |
| Dalton & Lark | 2,500,000 | 1 | .05 | .10¾ | Ontario | 150,000 | 100 | 8.50 | 9 10 |
| Daly | 150,000 | 20 | 1.40 | 1.47½ | Richmond-An. | 500,000 | 1 | 20 | .40 |
| Daly West | 150,000 | 30 | 12 85 | 13 00 | Sacramento | 1,000,000 | 5 | .47 | .48 |
| Dexter | 200,000 | 5 | 2.31 | 2.50 | Silver King | 150,000 | 20 | 48 00 | 53 50 |
| Eagle | 150,000 | 1 | .02 | .06 | Star Consolidat'd | 500,000 | 1 | .45 | .55 |
| Eagle & Blue Bell | 250,000 | 1 | 1.50 | 1.85 | Sunbeam | 250,000 | 1 | .68¾ | 69 |
| Emerald | 300,000 | 1 | ..... | ..... | Sunshine | 250,000 | 10 | 34 | .42 |
| Four Aces | 250,000 | 1 | 2¾ | .22¾ | Swansea | 100,000 | 5 | 3 92½ | 4 10 |
| Galena | 100,000 | 10 | .30 | .34 | South Swansea | 1,500,000 | 1 | 1.59 | 1 65 |
| Geyser-Marion | 300,000 | 5 | .33 | 35 | Utah | 100,000 | 1 | .8 | 1.10 |
| Grand Central | 250,000 | 1 | 5 95 | 6 04 | Valeo | 300,000 | 10 | .84½ | .88 |

*From Our Special Correspondent. † Utah companies. ‖ Mines in Vanderbilt, Cal. Mines in Tuscarora, Nev.

## ROSSLAND, BRITISH COLUMBIA.*

Oct. 11.

| Name of Company. | No. of shares. | Par value. | Selling price. | Name of Company. | No. of shares. | Par value. | Selling price. |
|---|---|---|---|---|---|---|---|
| Brandon & Gold. Cr. | 1,500,000 | $1 | $0.27 | Lerwick | 500,000 | $1 | $0.15 |
| Brit. Amer. Corp'at'n | 7,500,000 | 5 | 4 50 | Lily May | 1,000,000 | 1 | .10 |
| Brit.Col. Dev. Co. | 1,500,000 | 2½ | 5.00 | Lon.&Van.Fin.Dev.Co | 500,000 | 5 | ..... |
| Canadian Gold Fields | 10,000,000 | 0.10 | .10 | London B. C. Gold F. | 350,000 | 5 | 6.50 |
| Cariboo | 1,500,000 | 1 | 1.40 | Monte Cristo | 1,000,000 | 1 | ..... |
| Commander | 500,000 | 1 | ..... | New Gold Fields, B.C. | 250,000 | 1 | ..... |
| Deer Park | 1,000,000 | 1 | ..... | Novelty | 1,000,000 | 1 | ..... |
| Dundee | 1,000,000 | 1 | .15 | Queen Bess Prop. | 120,000 | 5 | 5.50 |
| Evening Star | 1,000,000 | 1 | .12 | Rambler Con. | 1,000,000 | 1 | .50 |
| Fern | 200,000 | ½ | .40 | Reco | 1,200,000 | 1 | ..... |
| Gold Fields of B.C. | 8,000,000 | 3½ | ..... | Red Mt.View | 1,000,000 | 1 | ..... |
| Hall Mines | 250,000 | 5 | 3.25 | St. Elmo | 1,000,000 | 1 | .05 |
| Hattie Brown | 1,000,000 | 1 | ..... | St. Paul | 1,000,000 | 1 | ..... |
| Homestake | 1,000,000 | 1 | .10 | Sarah Lee | 1,000,000 | 1 | ..... |
| Iron Colt | 1,000,000 | 1 | ..... | Silver Queen | 1,500,000 | 1 | .15 |
| Iron Horse | 1,000,000 | 1 | ..... | Slocan Star | 500,000 | 1 | 1.30 |
| Iron Mask | 500,000 | 1 | .75 | Vic.Tr MinesDev. Co. | 25,000 | 5 | ..... |
| Josie | 700,000 | 1 | ..... | Virginia | 500,000 | 1 | ..... |
| Jumbo | 500,000 | 1 | .10 | War Eagle Con | 2,000,000 | 1 | 3.25 |
| Kenneth | 1,000,000 | 1 | ..... | Waverly Mines | 100,000 | 5 | ..... |
| Keystone | 1,500,000 | 1 | ..... | White Bear | 3,000,000 | 1 | .10 |
| KootenayGold Fields | 20,000 | 5 | ..... | Wild Horse | 400,000 | 1 | ..... |

* From Our Special Correspondent.

## MEXICO.

Oct. 6.

| Name of Company. | No. of shares. | Last div'd | Prices. Op'g | Prices. Cl'g. | Name of Company. | No. of shares. | Last div'd | Prices. Op'g. | Prices. Cl'g. |
|---|---|---|---|---|---|---|---|---|---|
| Chihuahua: | | | | | Hidalgo: | | | | |
| Gloria | 1,500 | ..... | $50 | $50 | Real del Monte. | 2,554 | 10 00 | 500 | 520 |
| Durango: | | | | | San Francisco He | 6,000 | 2.00 | 190 | 195 |
| Barradon y Cab. | 2,400 | ..... | 40 | 40 | San Rafael y An. | 1,200 | 12.00 | 1,000 | 1,020 |
| Candelaria de Pan. | 1,200 | ..... | 20 | 20 | do. aviado | 1,200 | 7.00 | 400 | 410 |
| Capuzaya | 2,400 | ..... | 30 | 30 | do. del Oro | 3,000 | 5.00 | 20 | 20 |
| Penoles | 32,500 | 30.00 | 2,000 | 2,000 | Soledad | 960 | 5.00 | 240 | 230 |
| Restauradora | 10,000 | ..... | 20 | 20 | Sorpresa | 960 | 5.00 | 240 | 230 |
| Rosario y Anexas | 4,800 | ..... | 10 | 10 | Union Hacienda | 2,000 | 5.00 | 360 | 350 |
| Guanajuato: | | | | | Mexico: | | | | |
| Angustias | 2,400 | 5.00 | 280 | 300 | Coronas | 500 | ..... | 75 | 75 |
| Cinco Senores y An | 2,000 | 15.00 | 350 | 345 | Esperanza y An. | 3,000 | 10.00 | 1,575 | 1,600 |
| El Oro | 500 | ..... | 30 | 30 | Michoacan | 500 | ..... | ..... | ..... |
| do. pref. | 2,000 | ..... | 30 | 30 | Luz de Borda ava | 4,000 | ..... | 30 | 22 |
| Guadalupe Hacie'a | 10,000 | 2.00 | 235 | 240 | Pueblo: | | | | |
| Trinidad, aviador | 2,000 | ..... | 48 | 50 | Tlauzingo | 2,400 | ..... | 27 | 28 |
| do. aviada | 400 | ..... | 5 | 40 | S. Luis Potosi: | | | | |
| Zona Minera de Paz | 2,400 | ..... | 58 | 60 | Concep. y An. | 2,400 | ..... | 200 | 180 |
| Hidalgo: | | | | | Sta. MariadelaPaz | 2,400 | 10.00 | 720 | 840 |
| Amistad y Concord. | 9,600 | 1.47 | 30 | 29 | Zacatecas: | | | | |
| Arevalo | 720 | ..... | 200 | 200 | Asturiana y An. | 2,500 | 10.00 | 180 | 190 |
| Bartolome de Med. | 2,000 | 3.00 | 68 | 64 | Cabezon | 2,400 | ..... | 15 | 15 |
| Carmen | 1,100 | 7.75 | 400 | 350 | C'delar. de Pinos | 2,500 | ..... | 150 | 160 |
| Luz de Maravillas | 900 | ..... | 150 | 120 | Palma de Somb. | 2,400 | ..... | 100 | 80 |
| Pabellon | 800 | 27.59 | 30 | 20 | | | | | |

NOTE.—In most of the older Mexican mining companies the shares have no fixed par value. The capital is formed of a certain number of shares, the total value not being named. Many newer companies have a nominal par value, usually $50 or $100. Prices are in Mexican dollars.

## PARIS.

Sept. 28.

| Name of Company. | Country. | Product. | Capital Stock. | Par value. | Latest divs. | Prices. Op'ning. | Prices. Closing. |
|---|---|---|---|---|---|---|---|
| | | | Francs. | Fr. | Fr. | Fr. | Fr. |
| Acieries de Creusot | France | Steel mfrs. | 27,000,000 | 2,000 | 75.00 | 2,035.00 | 1,935.00 |
| " " Firminy | " | " " | 3,000,000 | 500 | 25.00 | 3,895 00 | 3,850.00 |
| " " Fives-Lille | " | " " | 12,000,000 | 500 | 35.00 | 572.50 | 566.00 |
| " " Huta-Bank | Russia | Iron & steel | ..... | 500 | ..... | 4,275.00 | 4,440.00 |
| " " la Marine | France | Steel mfrs. | 20,000,000 | 500 | 50.00 | 1,730.00 | 1,743.00 |
| " " Longwy | " | " " | ..... | 500 | 35.00 | 1,270.00 | 1,258.00 |
| Anzin | " | Coal | ..... | ..... | 220.00 | 6,050.00 | 6,150.00 |
| Blache-St. Vaast | " | Steel | ..... | 1,000 | 160.0 | 3,800.00 | 3,850.00 |
| Boleo | Lower Cal. | Copper | ..... | 500 | 1.0 | 2,890 00 | 2,825.00 |
| Briansk | Russia | Coal & Iron | ..... | 500 | ..... | 1,262 00 | 1,250.00 |
| Bruay | France | Coal | 3,000,000 | 400 | 1,000.0 | 48,700.00 | 49,800.00 |
| Cape Copper | S. Africa | Copper | 15,000,000 | 50 | 1.5 | 105 00 | 101.50 |
| Champ d'Or | " | Gold | 3,375,000 | 25 | 3.75 | 40 00 | 37.50 |
| Courrieres | France | Coal | 600,000 | 500 | 70.00 | 2,645.00 | 2,70 0.00 |
| De Beers Consolidated | S. Africa | Diamonds | 98,750,000 | 125 | 15.63 | 632.50 | 605.00 |
| Denain-Anzin | France | Steel | ..... | 500 | 25.00 | 1,125.00 | 1,135.00 |
| Dombrowa | Russia | Coal | ..... | 500 | 12.50 | 1,010.00 | 996.00 |
| Donetz | " | Steel | ..... | ..... | ..... | 1,250.00 | 1,16 0.00 |
| Dourges | " | Coal | ..... | 1,000 | 400.00 | 27,500.00 | 28,993.00 |
| Dynamite Centrale | France | Explosives | ..... | 500 | 12.40 | 500 00 | 500.00 |
| Epinac | " | Coal | ..... | 2,500 | 81.25 | 575.00 | 575.00 |
| Escombrera-Bleyberg | Spain | Lead | ..... | 500 | 35.00 | 1,105.00 | 1,108.00 |
| Fraser River | Brit. Col'mb | Gold | 250,000 | 25 | ..... | 7 00 | 7.00 |
| Huanchaca | Bolivia | Silver | 40,000,000 | 125 | 5.00 | 58.00 | 46.00 |
| Langlaagte Estate | S. Africa | Gold | 11,750,000 | 25 | 11.25 | 8 .00 | 80.00 |
| Lagunas | Chile | Nitrates | 16,250,000 | 125 | 12.50 | 25.00 | 28.00 |
| Laurium | Greece | Zinc & lead | 16,200,000 | 500 | 30.00 | 600.00 | 600.00 |
| Lautaro | Chile | Nitrates | 13,750,000 | 125 | ..... | 105.00 | 105.00 |
| Maldanado | Italy | Zinc | 12,500,000 | 500 | 40.00 | 1,425.00 | 1,410.00 |
| Metaux, Cie. Fran. de | France | Metal d'iers. | 25,000,000 | 500 | 30.00 | 450.00 | 485.00 |
| Mokta-el-Hadid | Algeria | Iron | 18,312,500 | 500 | 40.00 | 1,250.00 | 1,242.00 |
| Napthe Baku | Russia | Petroleum | ..... | ..... | ..... | 810.00 | 815.00 |
| Napthe, Le | " | " | ..... | ..... | ..... | 2,000.00 | 1,4 0.00 |
| Napthe Nobel | " | " | ..... | ..... | ..... | 650.00 | 650.00 |
| " " parts | " | " | ..... | ..... | ..... | 13,100.00 | 13,2 0.00 |
| Nickel | N.Caled'nia | Nickel | 10.000.000 | 250 | 30.00 | 396.00 | 387.50 |
| Penarroya | Spain | Coal, etc. | ..... | 500 | 65.00 | 2,455 00 | 2,43 .00 |
| Rebecca | Colo'do, U.S. | Gold | 5,000,000 | 25 | ..... | 5.00 | 4.50 |
| Rio Tinto | Spain | Copper | 40,625,000 | 125 | 47.70 | 1,189.00 | 1,160.00 |
| " " preferred | " | " | 40,625,000 | 125 | ..... | 155.00 | 154.00 |
| Rive-de-Gier | France | Coal | ..... | ..... | ..... | 21.75 | 22.00 |
| Robinson | S. Africa | Gold | 68,750,000 | 125 | 12.50 | 230.00 | 215.00 |
| St. Etienne | France | Coal | ..... | ..... | 18.00 | 470.00 | 466.00 |
| Salines de l'Est | France | Salt | ..... | 500 | 11.50 | 250.00 | 260.00 |
| Salines du Midi | France | " etc. | ..... | 500 | 25.00 | 875.00 | 870.00 |
| Sels Gem.de la Rus. Mer | Russia | " etc. | ..... | 500 | 25.00 | 595.00 | 595.00 |
| Tharsis | Spain | Copper | 33,750,000 | 50 | 3.75 | 208.00 | 206.50 |
| Vicoigne-Noeux | France | Coal | ..... | 1,000 | 750.00 | 24,250 00 | 24,000.00 |
| Vielle Montagne | Belgium | Zinc | 9,000,000 | 80 | 30.00 | 815.00 | 803.00 |

# STOCK QUOTATIONS.

## LONDON.

Oct. 6.

| NAME OF COMPANY. | Country. | Authorized capital. | Par value. | Last dividend. Amt. | Last dividend. Date. | Quotations. Buyers | Quotations. Sellers |
|---|---|---|---|---|---|---|---|
| | | | £ s. d. | s.d. | | £ s. d. | £ s. d. |
| Alaska Goldfields | Alaska | $300,000 | 1 0 0 | 2 1 | Mar., 1899 | 1 0 0 | 1 2 6 |
| Alaska-Mexican, g | " | 200,000 | 1 0 0 | 0 4.8 | July, 1899 | 17 6 | 1 2 6 |
| Alaska-Treadwell, g | " | 1,000,000 | 5 0 0 | 1 6 | July, " | 5 5 0 | 5 10 0 |
| Anaconda, c., s | Montana | 6,000,000 | 5 0 0 | 8 2½ | Nov., 1899 | 10 2 6 | 10 7 6 |
| Chiapas, g., s., c | Mexico | 252,500 | 1 0 0 | ..... | ..... | 5 0 | 7 0 |
| Con. Gold Fields | " | 300,000 | 1 0 0 | ..... | ..... | 15 0 | 1 0 0 |
| De Lamar, g., s | Idaho | 400,000 | 1 0 0 | 6 | May, 1899 | 4 0 | 5 0 |
| Elkhorn Priority (New), s | Colorado | 87,500 | 1 0 0 | 1 0 | June, 1898 | 1 3 | 3 9 |
| Golden Gate, g | California | 80,000 | 1 0 0 | ..... | ..... | 1 0 | 2 0 |
| Grand Central, g., s | Mexico | 300,000 | 1 0 0 | 2 0 | Aug., 1899 | 1 0 0 | 1 2 6 |
| Hall Mines, c., s | British Col | 250,000 | 1 0 0 | 1 0 | May, 1898 | 7 6 | 10 0 |
| Le Roi, g | " " | 1,000,000 | 5 0 0 | 5 0 | Nov., 1899 | 6 0 0 | 6 2 6 |
| Lillie, g | Colorado | 250,000 | 1 0 0 | 2½ | Oct., 1899 | 15 0 | 1 0 0 |
| Montana, g., s | Montana | 680,000 | 1 0 0 | 6 | Apr., 1899 | 3 0 | 3 6 |
| Mountain Copper | California | 1,250,000 | 5 0 0 | 9 0 | Sept, 1899 | 7 15 0 | 8 0 0 |
| Newfoundland, c | Newfoundland | 250,000 | 1 0 0 | ..... | ..... | 5 0 | 7 6 |
| Palmarejo & Mexican, g., s | Mexico | 800,000 | 1 0 0 | ..... | ..... | 1 6 | 2 6 |
| Piumas-Eureka, g | California | 281,250 | 1 0 0 | 0 6 | Oct., 1896 | 1 3 | 2 6 |
| Richmond, g., s | Nevada | 270,000 | 5 0 0 | 1 0 | Dec., " | 5 0 | 6 3 |
| Sierra Buttes, g | California | 245,000 | 2 0 0 | 0 6 | Apr., " | 6 | 1 0 |
| *Strattor's Independence | Colorado | 1,100,000 | 1 0 0 | 2 0 | Sept., 1899 | 2 3 9 | 2 6 3 |
| Colomb. Hydraulic, g | Colombia | 75,000 | 1 0 0 | 6 | Jan., 1899 | 3 9 | 6 3 |
| Copiapo, c | Chile | 200,000 | 2 0 0 | 6 0 | July, 1899 | 3 1 6 | 3 12 6 |
| Frontino & Bolivia, g | Colombia | 140,000 | 1 0 0 | 1 6 | Oct., 1899 | 2 2 6 | 2 5 0 |
| St. John del Rey, g | Brazil | 600,000 | 1 0 0 | 1 3 | June, 1899 | 1 7 0 | 1 8 0 |
| Tolima A., s., g | Colombia | 70,000 | 5 0 0 | 5 0 | July, 1897 | 2 10 0 | 3 0 0 |
| Tolima B., s., g | " | 80,000 | 5 0 0 | 5 0 | " " | 1 10 0 | 2 0 0 |
| Utah Con., g (High'nd Boy) | Utah | 900,000 | 1 0 0 | rts. | Mar., 1898 | 7 12 6 | 7 17 6 |
| Velvet, g | British Col'mbia | 100,000 | 1 0 0 | ..... | ..... | 1 0 0 | 1 2 6 |
| Ymir, g | " | 200,000 | 1 0 0 | ..... | ..... | 1 0 0 | 1 1 3 |
| British Am. Corp. | " | 1,500,000 | 1 0 0 | rts. | Dec., 1898 | 1 1 0 | 1 2 0 |
| Linares, l. | Spain | 45,000 | 3 0 0 | 12 6 | Sept., 1899 | 8 0 0 | 9 0 0 |
| Mason & Barry, c., sul | Portugal | 630,000 | 2 0 0 | 5 0 | May, 1899 | 3 15 0 | 4 0 0 |
| Rio Tinto, c | Spain | 1,625,000 | 5 0 0 | 1 15 | Nov., 1899 | 46 2 6 | 46 7 6 |
| " " pref | " | 1,625,000 | 5 0 0 | 2 6 | " 1899 | 6 3 9 | 6 5 0 |
| Pharsis, c | " | 1,250,000 | 2 0 0 | 11 0 | May. 1898 | 7 15 0 | 8 0 0 |
| Libiola, c | Italy | 252,000 | 5 0 0 | 1 6 | Sept., 1899 | 1 12 6 | 1 17 6 |
| Assoc. Gold Mines | W. Australia | 500,000 | 1 0 0 | 4 0 | Oct., 1899 | 11 17 6 | 12 0 0 |
| Broken Hill Prop., s | N.S. Wales | 384,000 | 8 0 0 | 1 0 | Oct., 1899 | 2 1 6 | 2 2 6 |
| Great Boulder, Prop | W. Australia | 1,750,000 | 2 0 | 6 | Sept., 1899 | 1 17 6 | 1 18 6 |
| Hannan's Brownhill, g | " | 110,000 | 1 0 0 | 7 6 | Nov., 1899 | 11 10 0 | 11 15 0 |
| Ivanhoe Gold Corp | " | 1,000,000 | 5 0 0 | 5 0 | Oct., 1899 | 16 12 6 | 16 17 6 |
| Kalgurlie, g | " | 120,000 | 1 0 0 | rts. | Feb., 1899 | 1 2 6 | 1 7 6 |
| Lake View Consols, g | " | 250,000 | 1 0 0 | 21 | Nov., 1899 | 21 7 6 | 21 12 6 |
| Mt. Lyell M. & R., l., c | Tasmania | 975,000 | 9 0 0 | 4 0 | Oct., 1899 | 9 17 6 | 10 2 6 |
| Mt Morgan, g | Queensland | 1,000,000 | 1 0 0 | 7 | Sept., 1899 | 5 2 6 | 5 5 0 |
| Waihi, g | New Zealand | 320,000 | 1 0 0 | 2 0 | Oct., 1899 | 7 16 3 | 8 1 3 |
| West Aust. Jt. Stk. L. & F | W. Australia | 1,000,000 | 1 0 0 | 1 0 | Dec., 1898 | 4 5 | 5 0 |
| Champion Reef, g | Colar Fields | 220,000 | 10 0 0 | 3 6 | May, 1899 | 4 15 0 | 5 1 3 |
| Mysore Gold, g | " | 250,000 | 10 0 0 | 4 0 | July, 1899 | 5 10 0 | 5 12 6 |
| Nundydroog, g | " | 242,000 | 1 0 0 | 2 0 | " 1899 | 2 17 6 | 3 0 0 |
| Ooregum, g | " | 145,000 | 1 0 0 | 6 | Aug., 1899 | 3 10 0 | 3 12 6 |
| " pref. g | " | 120,000 | 1 0 0 | 2 6 | " 1899 | 4 8 9 | 4 11 3 |
| Angelo, g | Transvaal | 275,000 | 1 0 0 | 5 0 | Mar., 1899 | 6 2 6 | 6 7 6 |
| Bonanza, g | " | 200,000 | 1 0 0 | 11 0 | June, 1898 | 4 0 0 | 4 5 0 |
| British S. Af., chartered | So. Africa | 5,000,000 | 1 0 0 | rts. | May, 1899 | 2 12 6 | 2 15 0 |
| Cape Copper, c | " | 600,000 | 1 0 0 | 5 0 | July, 1899 | 3 17 6 | 4 2 6 |
| " " pref | " | 150,000 | 2 0 0 | 5 0 | " 1899 | 4 0 0 | 4 5 0 |
| City & Suburban (New), g | Transvaal | 1,360,000 | 4 0 0 | 8 0 | Aug , 1899 | 4 15 0 | 5 0 0 |
| Jon Deep Level, g | " | 200,000 | 1 0 0 | x all. | June, 1898 | 1 2 6 | 1 7 6 |
| Crown Reef, g | " | 120,000 | 1 0 0 | 18 0 | Nov., 1899 | 14 10 0 | 15 0 0 |
| De Beers Con., d | Cape Colony | 3,930,000 | 5 0 0 | 21 | June, 1899 | 24 7 6 | 24 12 6 |
| Durban Roodepoort, g | Transvaal | 125,000 | 1 0 0 | 5 | Sept., 1899 | 5 0 0 | 5 10 0 |
| Ferreira, g | " | 90,000 | 1 0 0 | 30 0 | Aug., 1899 | 19 15 0 | 20 5 0 |
| Geldenhuis Deep, g | " | 350,000 | 1 0 0 | 8 0 | Aug., 1899 | 8 7 6 | 8 12 6 |
| Geldenhuis Est., g | " | 200,000 | 1 0 0 | 10 0 | Aug., 1899 | 5 17 6 | 6 2 6 |
| Ginsberg, g | " | 160,000 | 1 0 0 | 5 0 | Aug., 1899 | 2 15 0 | 3 0 0 |
| Henry Nourse, g | " | 125,000 | 1 0 0 | 10 0 | Aug., 1899 | 7 5 0 | 7 10 0 |
| Heriot (New), g | " | 115,000 | 1 0 0 | 5 0 | Sept., 1899 | 6 0 0 | 6 5 0 |
| Jagersfontein, d | Orange Fr. St. | 1,000,000 | 5 0 0 | 9 0 | June, 1899 | 12 10 0 | 13 0 0 |
| ‡ Johannesburg Con. Invst | So. Africa | 2,750,000 | 1 0 0 | 2 0 | Aug., 1897 | 1 8 9 | 1 10 0 |
| Jubilee, g | Transvaal | 50,000 | 1 0 0 | 5 0 | Aug, 1899 | 5 0 0 | 5 10 0 |
| Jumpers, g | " | 100,000 | 1 0 0 | 4 0 | Nov., 1899 | 4 7 6 | 4 12 6 |
| Kleinfontein, g | " | 275,000 | 1 0 0 | 2 0 | Mar., 1899 | 2 8 9 | 2 6 3 |
| Langlaagte Estate, g | " | 300,000 | 1 0 0 | 3 0 | Sept., 1899 | 3 7 6 | 3 12 6 |
| May Con., g | " | 275,000 | 1 0 0 | 4 0 | Aug., 1899 | 4 0 0 | 4 5 0 |
| Meyer & Charlton, g | " | 85,000 | 1 0 0 | 8 0 | July, 1899 | 4 17 6 | 5 2 6 |
| Namaqua, c | Cape Colony | 200,000 | 1 0 0 | 6 6 | June, 1899 | 4 7 6 | 4 11 0 |
| Primrose (New), g | Transvaal | 300,000 | 1 0 0 | 6 0 | Aug., 1899 | 3 13 9 | 3 16 3 |
| Rand Mines, g | So. Africa | 490,000 | 1 0 0 | 15 0 | Aug., 1899 | 31 17 6 | 32 2 6 |
| Robinson, g | Transvaal | 2,750,000 | 5 0 0 | 8 0 | Aug., 1899 | 8 7 6 | 8 12 6 |
| Sheba, g | " | 1,100,000 | 1 0 0 | 0 6 | July, 1898 | 1 17 6 | 1 0 0 |
| Sim. & Jack Prop., g | " | 5,000,000 | 5 0 0 | 4 0 | July, 1899 | 5 0 0 | 5 5 0 |
| Wemmer, g | " | 80,000 | 1 0 0 | 15 0 | June, 1899 | 11 5 0 | 11 15 0 |
| Wolhuter, g | " | 860,000 | 4 0 0 | 2 0 | Feb., 1899 | 3 15 0 | 4 0 0 |
| Worcester, g | " | 100,000 | 1 0 0 | 8 0 | July, 1899 | 2 5 0 | 2 10 0 |

* Ex-dividend. ‡ Dividend pending.

## MEETINGS.

| NAME OF COMPANY. | Location | Meeting. | Date. | Place of Meeting. |
|---|---|---|---|---|
| Alliance | Utah | Annual. | Oct. 24. | 504 Progress Building, Salt Lake City. |
| Alpha Con | Nevada | " | Oct 31. | 309 Montgomery st., San Francisco, Cal. |
| Anchor | Utah | " | Nov. 17. | Park City, Utah. |
| Andes | Nevada | " | Dec 18 | 309 Montgomery st., San Francisco, Cal. |
| Central Eureka | California | " | Oct 24. | 320 Sansome st., San Francisco, Cal |
| Challenge Con | Nevada | " | Nov. 16 | Mills Building, San Francisco, Cal. |
| Chrysolite | Colorado | " | Nov. 3. | 80 Broadway, New York City. |
| Confidence | Nevada | " | Nov. 16. | 414 California st. San Francisco, Cal. |
| Copper Queen | Arizona | " | Dec. 7 | Salt Lake City, Utah. |
| E. Best & Belcher | Nevada | " | Nov. 22 | 331 Montgomery st, San Francisco, Cal. |
| Edwin Booth | Colorado | " | Sept. 30. | 1421 Curtis st., Denver, Colo. |
| Great Western, q | California | " | Nov. 6. | 530 California st., San Francisco, Cal. |
| Mexican | Nevada | " | Dec. 5 | 309 Montgomery st, San Francisco, Cal. |
| N. Gould & Curry | Nevada | " | Nov. 20 | 337 Pine st, San Francisco, Cal. |
| Occidental Con | Nevada | " | Nov. 20 | 309 Montgomery st, San Francisco, Cal. |
| Oneida | California | Special | Oct 24. | 320 Sansome st., San Francisco, Cal |
| Puget Sound Iron | California | Annual | Nov. 15 | 530 California st, San Francisco, Cal. |
| Santa Rosalia | Calif rnia | " | Dec. 15. | 310 Pine st, San Francisco, Cal. |
| Siskiyou Con | California | " | Nov. 4. | 306 Pine st, San Francisco, Cal. |

## ASSESSMENTS.

| NAME OF COMPANY. | Location. | No. | Dlq | Sale. | Amt. | OFFICE. |
|---|---|---|---|---|---|---|
| | | | Aug. | | | |
| R. G. W | Utah | 2 | 17 | Nov. 4 | .01 | 34 W. 2d South st., Salt Lake City. |
| | | | Sept. | | | |
| Eureka Con. D | Cal. | 20 | 12 | Sept. 30 | .00½ | 1,209 Claus Spreckels Bldg., S. Fra'co. |
| | | | Oct. | | | |
| Belcher | Nev. | ... | 25 | ..... | .15 | Mills Bldg., San Francisco, Cal. |
| Best & Belcher | Nev. | 68 | 27 | Nov. 17 | .20 | 309 Montgomery st., San Francisco. |
| Bingham Placer | Utah | 1 | 16 | Nov. 18 | .10 | 201 McCornick Block, Salt Lake City |
| Bullion | Nev. | 15 | 24 | Nov. 14 | .05 | 331 Pine st., San Francisco, Cal. |
| California Borax | Cal. | 1 | 30 | Nov. 28 | 2 00 | 310 Pine st. San Francisco, Cal. |
| Con. Cal. & Va | Nev. | 14 | 11 | Nov. 1 | .25 | 309 Montgomery st., San Francisco. |
| Eureka Con. | Nev. | 16 | 10 | Oct. 30 | .10 | Laidlaw & Co., 14 Wall st., N. Y. |
| Gerrymander | Cal. | ... | 30 | ..... | .10 | ..... |
| Gould & Curry | Nev. | 87 | 4 | Oct. 25 | .15 | 309 Montgomery st., San Francisco. |
| Marina Marsican | Cal. | 20 | 24 | Nov. 15 | .05 | 217 Sacramento st. San Francisco. |
| Salmon River | Mont | ... | 20 | Nov. 15 | .02½ | 19 W. Granite st., Butte, Mont. |
| Success | Utah | 7 | 21 | Nov. 11 | .01 | 617 McCornick Block, Salt Lake City |
| Sunbeam Con | Utah | 24 | 5 | Nov. 21 | .10 | 419 Dooly Block, Salt Lake City. |
| | | | Nov. | | | |
| Andes | Nev. | 49 | 6 | Nov. 27 | .05 | 309 Montgomery st., San Francisco. |
| Con. Imperial | Nev. | 43 | 14 | Dec. 5 | .01 | Mills Bldg., San Francisco, Cal. |
| Con. St. Gothard | Cal. | ... | 9 | .... | .10 | ..... |
| Hale & Norcross | Nev. | 3 | 7 | Nov. 28 | .10 | 331 Pine st., San Francisco. |
| Inyo Marble | Cal. | 33 | 6 | Dec. 6 | .05 | Mills Bldg., San Francisco, Cal. |
| Mariposa Com'l. | Cal | 13 | 8 | Dec. 5 | 10 00 | 320 Sansome st., San Francisco, Cal. |
| Mexican | Nev. | 62 | 13 | Dec. 4 | .15 | 309 Montgomery st., San Francisco. |
| Ophir | Nev. | .. | 14 | .. .. | .20 | 309 Montgomery st., San Francisco. |
| Revenue | Utah | 2 | 6 | Dec. 11 | .02 | 419 Dooly Block, Salt Lake City. |
| Reward | Cal. | .. | 4 | ..... | .02½ | ..... |
| Seg. Belcher & Mides | Nev. | 24 | 2 | Nov. 22 | .05 | 309 Montgomery st., San Francisco. |

## DIVIDENDS.

| NAME OF CO. | Date. | Am't. | Paid 1899. | Grand Total. | NAME OF CO. | Date. | Am't. | Paid 1899. | Grand Total. | NAME OF CO. | Date. | Am't. | Paid 1899. | Grand Total. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Alamo, Utah | ..... | ..... | $2.500 | $2,500 | De Lamar, Idaho | ..... | ..... | $18,000 | $2,346,000 | Napa Con... | Oct. 2 | $30,000 | $90,000 | $1,040,000 |
| Alaska-Mexican | Oct 28 | $18,000 | 72,000 | 429,031 | El Dorado, Cal | ..... | ..... | 10,000 | 10,000 | New Idria | Oct. 2 | 30,000 | 90,000 | 170,000 |
| Alaska-Treadwell | Oct. 28 | 75,000 | 300,000 | 4,220,000 | Elkton, Colo | ..... | $37,500 | 37,500 | 694,461 | New York Zinc | Oct. 2 | 7,000 | 7,000 | 7,000 |
| Ætna Con | Oct. 2 | 15,000 | 45,000 | 195,000 | Empire State, Ida | Oct. 16 | 29,554 | 197,027 | 253,929 | N.Y.& H.-Rosario | Oct. 20 | 15,000 | 135,000 | 1,125,000 |
| Amalgamated Cop | Oct. 16 | 1,500,000 | 1,500,000 | 1,500,000 | Fanny Rawlings | ..... | ..... | 20,000 | 20,000 | North Star, Cal | ..... | ..... | 50,000 | 550,000 |
| American Gold | ... | ... | 48,000 | 434,000 | Ferris-Hagty, Wyo | ..... | ... | 5,000 | 5,000 | Olive | ..... | ..... | 12,000 | 12,000 |
| American I.&R. p | Oct 10 | 568,750 | 568,750 | 568,750 | Garfield Con | ..... | ..... | 12,000 | 34,000 | Okanogan, Wash. | Oct. 2 | 3,125 | 3,125 | 3,125 |
| American Zn. Mg | Oct. 12 | 10,000 | 10,000 | 10,000 | Gold Coin, Vict | Oct 25 | 10,000 | 100,000 | 250,000 | Orig. Empire, Cal | Oct. 13 | 50,000 | 100,000 | 550,000 |
| Am. Zinc-L. & Sm | Oct. 2 | 20,000 | 40,000 | 40,000 | Golden Cycle | ..... | ..... | 85,000 | 238,500 | Osceola | ..... | ..... | 279,000 | 2,801,500 |
| Aracoda Copper | Nov. 1 | 2,400,000 | 3 900,000 | 12,150,000 | Golden Eagle, Col | ..... | ..... | 5,000 | 5,000 | Parrot | Oct. 12 | 315,000 | 897,000 | 3,035,898 |
| Anchoria-Leland | Oct 16 | 18,000 | 72,000 | 234,000 | Gold King, Col | Oct 25 | 30,000 | 90,000 | 90,000 | Pennsylvania, Cal | Oct. 8 | 10,300 | 47,650 | 115,875 |
| Apollo Con., Alas | ..... | ..... | 40,000 | 140,000 | Golden M. & Ex | ..... | ..... | 10,000 | 10,000 | Pennsylvania Coal | ..... | ..... | 890,000 | 14,050,000 |
| April Fool, Nev | ..... | ... | 11,000 | 11,000 | Grafton, Colo | Nov. 1 | 10,000 | 10,000 | 10,000 | Petro, Utah | ..... | ..... | 10,000 | 27,500 |
| Argonaut, Cal | Oct 26 | 20,000 | 200,000 | 380,000 | Grand Central, Ut | ..... | ..... | 347,500 | 666,250 | Pioneer, Cal | ..... | ..... | 12,500 | 62,500 |
| Associated, Colo | ..... | ..... | 12,000 | 84,000 | Grass Valley Ex | ..... | ..... | 22,500 | 22,500 | Portland | ..... | ..... | 540,000 | 2,377,080 |
| Aurora Iron | ..... | ..... | 50,000 | 800,000 | Gwin, Cal | Oct. 12 | 5,000 | 40,000 | 91,500 | Quicksilver (Pref.) | ..... | ..... | 21,500 | 1,845,411 |
| Bald, Butte | Oct. 11 | 15,000 | 112,500 | 762,141 | Helena & Frisco | ..... | ..... | 125,000 | 550,000 | Quincy | ..... | ..... | 950,000 | 11,070,000 |
| Bonanza, Wash | ... | 5,000 | 5,000 | 5,000 | Hidden Treas., Cal | ..... | ..... | 3,600 | 3,600 | Raven, Colo | Nov20 | 10,000 | 20,000 | 49,500 |
| Bonanza Dev., N.M | ... | ... | 1,050,000 | 1,500,000 | High Five, Colo | ..... | ..... | 10,000 | 10,000 | Republic, Wash | ..... | ..... | 157,500 | 323,000 |
| Boston-Aurora | Oct. 25 | 5,328 | 21,312 | 21,312 | Holy Terror | ..... | ..... | 25,000 | 142,000 | Royal, B. C | ..... | ..... | 50,000 | 1,050,000 |
| Boston & Colo. Sm. | Oct. 2 | 11,250 | 45,000 | ..... | Homestake | Oct. 25 | 105,000 | 752,500 | 7,933,750 | Sacramento | Oct. 1 | 5,000 | 50,000 | 138,000 |
| Boston-Duenweg, z | Oct. 5 | 4,000 | 24,000 | 24,000 | Horn Silver | ..... | ..... | 20,000 | 5,250,000 | St. Joseph Lead | ..... | ..... | 75,000 | 2,859,500 |
| Boston-LittleC Zn | Oct. 1 | 15,000 | 60,000 | 60,000 | Isabella | ..... | ..... | 202,500 | 472,500 | Santa Rosalie, Cal | ..... | ..... | 5,000 | 130,000 |
| Boston-Provid'nce | Oct. 2 | 750 | 9,750 | 9,750 | Jack Pot | ..... | ..... | 75,000 | 75,000 | Silver King | Oct. 10 | 50,000 | 475,000 | 2,300,000 |
| Boston Quick, Cal | Oct. 2 | 10,000 | 10,000 | 10,000 | Jamison, Cal | ..... | ..... | 11,700 | 50,700 | Small Hopes | ... | ... | 25,000 | 3,325,000 |
| Boston & Cal | ..... | ..... | 72,000 | 72,000 | Lake Superior Ir | ..... | ..... | 84,000 | 227,860 | Smuggler | Oct 16 | 15,000 | 105,000 | 1,200,000 |
| Boston & Mont | ..... | ..... | 3,150,000 | 12,275,000 | Last Dollar, Colo | Nov. 1 | 20,000 | 20,000 | 20,000 | South Swansea | ..... | ..... | 37,500 | 150,000 |
| Breece | ..... | ..... | 30,000 | 60,000 | Lillie | Oct. 2 | 11,250 | 112,500 | 279,110 | Standard, Cal | ..... | ..... | 40,000 | 3,879,226 |
| Bul. Bec. & Champ | Oct. 15 | 10,000 | 100.000 | 2,418,400 | Little Tiger, Cal | Oct. 16 | 7,500 | 17,500 | 17,500 | Standard, Ida | ..... | ..... | 30,000 | 1,745,000 |
| Bunker Hill & S | Oct. 4 | 21,000 | 126,000 | 726,000 | Mammoth | Oct. 2 | 40,000 | 220,000 | 1,570,000 | Stratton's Inde'ce | ..... | ..... | 488,000 | 488,000 |
| Calumet & Hecla | ... | ..... | 8,000,000 | 64,850,000 | Marion Con., Colo | ... | ... | 5,000 | 300,000 | Swansea | Oct. 10 | 5,000 | 50,000 | 241,000 |
| Centenn'l Eureka | ..... | ..... | 120,000 | 2,150,000 | M'y McKinney, Col | Nov. 1 | 30,000 | 30,000 | 30,000 | Tamarack | ..... | ..... | 240,000 | 5,910,000 |
| Central Lead | Oct. 16 | 5,000 | 50,000 | 132,000 | Mead, Cal | ..... | ..... | 40,000 | 120,000 | Tomboy | ..... | ..... | 80,000 | 730,000 |
| Champion, Cal | ..... | ..... | 8,500 | 304,700 | Mercur | Oct. 20 | 50,000 | 100,000 | 1,341,000 | United Z.&L., pfd | Oct. 16 | 20,000 | 40,000 | 40,000 |
| Charleston, S. C | ..... | ..... | 20,000 | 200,000 | Mo. Zinc Fields, pfd | Oct. 12 | 2,664 | 15,984 | 15,984 | Utah, Utah | ..... | ..... | 2,000 | 179,000 |
| Colorado Sm. | ..... | ..... | 100,000 | 1,945,000 | Modoc | Oct. 16 | 5,000 | 95,000 | 175,000 | Vindicator | Oct. 20 | 50,750 | 177.625 | 304,500 |
| Colonial Lead, Mo | ..... | ... | 10,000 | 10,000 | Montana, Ltd | ..... | ..... | 98,855 | 453,700 | War Eagle, B. C. | Oct. 16 | 26,250 | 262,500 | 440,250 |
| Com'wealth Z., pref | Nov. 1 | 10,000 | 10,000 | 10,000 | Mont. Ore Pur | Oct. 27 | 80,000 | 560,000 | 1,360,000 | Weath. Bonanza | ..... | ..... | 1,562 | 1,562 |
| Consolidation Coal | ..... | ..... | 205,000 | 5,716,650 | Moon-Anchor, Colo | Nov. 1 | 45,000 | 45,000 | 306,000 | Wolverine | Oct. 2 | 120,000 | 210,000 | 270,000 |
| Daly-West, Utah | Oct. 25 | 30,000 | 30,000 | 30,000 | Morning Star, Cal | Oct. 16 | 7,200 | 63,600 | 751,800 | Yellow Aster | Oct. 9 | 10,000 | 95,000 | 263,789 |
| Delta L. & Z., Mo | Nov 1 | 820 | 3,280 | 3,280 | Moulton, Mont | ..... | ..... | 20,000 | 480,000 | | | | | |
| D'r Tr'l No. 2, Wash | Oct. 25 | 2,500 | 25,000 | 42,500 | Mountain Copper | ..... | ..... | 540,000 | 633,750 | Grand Total | ..... | $5,981,233 | $31,441,320 | 206,995,320 |
| Doe Run, Mo | Oct. 16 | 2,500 | 25,000 | 85,000 | Mt. Shasta, Cal | ..... | ..... | 6,000 | 6,000 | | | | | |

## DIVIDEND-PAYING MINES.

| | Name and Location of Company. | | Capital Stock. | Shares. No. | Shares. Par Val | Assessments. Total Levied. | Assessments. Date and Amount of Last. | | | | Dividends. Total Paid. | Dividends. Date and Amount of Last. | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | Etna Cons., q | Cal | $500,000 | 100,000 | $5 | * | | | | | $195,000 | Oct. | 1899 | .10 |
| 2 | Alaska-Mexican, g | Alask | 1,000,000 | 200,000 | 5 | | | | | | 411,081 | July. | 1899 | .10 |
| 3 | Alaska-Treadwell, g | Alask | 5,000,000 | 200,000 | 25 | * | | | | | 4,145,000 | July. | 1899 | .37½ |
| 4 | Alamo, g. c. i | Utah. | 125,000 | 125,000 | 1 | $937 | Mar. | 1898 | .00¼ | | 2,500 | April. | 1899 | .02 |
| 5 | Alice, g. s | Mont. | 10,000,000 | 400,000 | 25 | * | | | | | 1,075,000 | April. | 1898 | .05 |
| 6 | Amalgamated, c | Mont. | 75,000,000 | 750,000 | 100 | | | | | | 1,500,000 | Oct. | 1899 | 2.00¼ |
| 7 | American Coal | Md | 1,500,000 | 60,000 | 25 | | | | | | 727,500 | Sept. | 1899 | 1.25 |
| 8 | American Gold, g. s. c. l | Colo. | 3,000,000 | 300,000 | 10 | * | | | | | 434,000 | June. | 1899 | .09 |
| 9 | Amer. Sm. &Ref., pref. | U. S. | 32,500,000 | 32,500 | 100 | | | | | | 568,750 | Oct. | 1899 | 1.75 |
| 10 | Am. Zinc, Lead & Sm. | Mo | 500,000 | 200,000 | 25 | | | | | | 40,000 | Oct. | 1899 | .10 |
| 11 | Anaconda Copper | Mont. | 30,000,000 | 1,200,000 | 25 | | | | | | 12,150,000 | Nov. | 1899 | 2.00 |
| 12 | Anchoria-Leland, g | Colo. | 600,000 | 600,000 | 1 | * | | | | | 198,000 | April | 1899 | .03 |
| 13 | Appie Ellen, g | Colo. | 600,000 | 600,000 | 1 | | | | | | 25,000 | Aug. | 1898 | .01 |
| 14 | April Fool | Nev. | 500,000 | 500,000 | 1 | | | | | | 11,000 | Sept. | 1899 | .01 |
| 15 | Argonaut | Cal | 2,000,000 | 200,000 | 10 | | | | | | 340,000 | Aug. | 1899 | .10 |
| 16 | Associated, g | Colo. | 1,250,000 | 1,250,000 | 1 | * | | | | | 84,000 | Feb. | 1899 | .01 |
| 17 | Atlantic, c | Mich. | 1,000,000 | 40,000 | 25 | | | | | | 780,000 | Feb. | 1898 | 1.00 |
| 18 | Aurora, i | Mich. | 2,500,000 | 100,000 | 25 | * | | | | | 890,000 | June. | 1899 | .50 |
| 19 | Bald Butte | Mont. | 250,000 | 250,000 | 1 | * | | | | | 747,141 | Sept. | 1899 | .06 |
| 20 | Big Six, g. s | Colo. | 500,000 | 500,000 | 1 | | | | | | 15,000 | May. | 1898 | .00½ |
| 21 | Bonanza | Wash | 1,000,000 | 1,000,000 | 1 | * | | | | | 5,000 | Sept. | 1899 | .00¼ |
| 22 | Bonanza, Dev | NMex | 3,000,000 | 300,000 | 10 | | | | | | 1,500,000 | June. | 1899 | 3.50 |
| 23 | Boston-Aurora, pref | Mo | 800,000 | 32,000 | 25 | | | | | | 15,984 | Sept. | 1899 | .17 |
| 24 | Boston & California | Cal | 600,000 | 600,000 | 1 | | | | | | 72,000 | June. | 1899 | .06 |
| 25 | Boston-Little Circle, z. | Mo-K. | 1,000,000 | 100,000 | 10 | * | | | | | 45,000 | Sept. | 1899 | .15 |
| 26 | Boston & Mont. Con | Mont. | 3,750,000 | 150,000 | 25 | * | | | | | 12,275,000 | Aug. | 1899 | 10.00 |
| 27 | Boston, q | Cal | 1,000,000 | 100,000 | 10 | * | | | | | 10,000 | Oct. | 1899 | .10 |
| 28 | Breece, i | Colo. | 5,000,000 | 200,000 | 25 | | | | | | 60,000 | Sept. | 1899 | .05 |
| 29 | Bullion-Beck & Champ. | Utah. | 1,000,000 | 100,000 | 10 | * | | | | | 2,408,400 | Sept. | 1899 | .10 |
| 30 | Bunker Hill & S., s. l | Idaho | 3,000,000 | 300,000 | 10 | | | | | | 705,000 | May. | 1899 | .07 |
| 31 | Calumet & Hecla, c | Mich. | 2,500,000 | 100,000 | 25 | | | | | | 64,850,000 | Sept. | 1899 | 20.00 |
| 32 | Centen l-Eureka, g.s.l.c | Utah. | 1,500,000 | 30,000 | 50 | 30,000 | Mar. | 1889 | 1.00 | | 2,150,000 | Aug. | 1899 | .50 |
| 33 | Central Lead, l | Mo | 1,000,000 | 10,000 | 100 | * | | | | | 127,000 | Sept. | 1899 | .50 |
| 34 | Champion, g. s | Cal | 340,000 | 34,000 | 10 | | | | | | 296,200 | April. | 1898 | .25 |
| 35 | Charleston, p. r | S. C. | 1,000,000 | 10,000 | 100 | * | | | | | 200,000 | June. | 1892 | 2.00 |
| 36 | Consolidation Coal | Md | 10,250,000 | 102,500 | 100 | | | | | | 5,716,650 | Feb. | 1899 | 2.00 |
| 37 | Con. Tiger & Poorman | Idaho | 1,000,000 | 1,000,000 | 1 | * | | | | | 20,000 | Dec. | 1898 | .02 |
| 38 | Croesus, g | Cal | 1,000,000 | 200,000 | 5 | | | | | | 30,000 | Dec | 1898 | .15 |
| 39 | Crowned King, g. s. l | Ariz | 6,000,000 | 600,000 | 10 | * | | | | | 232,000 | Dec. | 1898 | .02 |
| 40 | Deadwood-Terra, g | S. D. | 5,000,000 | 200,000 | 25 | * | | | | | 1,350,000 | May. | 1898 | .15 |
| 41 | De Lamar, g. s | Idaho | 2,000,000 | 400,000 | 5 | | | | | | 2,346,000 | May | 1899 | .12 |
| 42 | Delta Lead & Zinc | Mo | 100,000 | 100,000 | 1 | * | | | | | 2,460 | Oct. | 1899 | .00¼ |
| 43 | Deer Trail No. 2 | Wash | 1,000,000 | 1,000,000 | 1 | | | | | | 40,000 | Sept. | 1899 | .00¼ |
| 44 | Doe Run, l | Mo | 500,000 | 5,000 | 100 | | | | | | 85,000 | Sept. | 1899 | .50 |
| 45 | Elkton Cons., g | Colo. | 1,250,000 | 1,250,000 | 1 | | | | | | 694,461 | Sept. | 1899 | .03 |
| 46 | El Paso, g. s | Colo. | 650,000 | 650,000 | 1 | | | | | | 12,393 | Jan. | 1898 | .01 |
| 47 | Empire State-Idaho | Idaho | 1,000,000 | 100,000 | 10 | | | | | | 229,375 | Sept. | 1899 | .30 |
| 48 | Enterprise, s. l | Colo. | 500,000 | 500,000 | 1 | | | | | | 900,000 | Sept. | 1898 | .05 |
| 49 | Fanny Rawlings, g. s | Colo. | 1,000,000 | 1,000,000 | 1 | | | | | | 20,000 | Aug. | 1899 | .01 |
| 50 | Ferris-Haggarty, c.g.s. | Wyo. | 1,000,000 | 1,000,000 | 1 | | | | | | 5,000 | Mar. | 1899 | .00½ |
| 51 | Garfield Con., g | Colo. | 1,200,000 | 1,200,000 | 1 | | | | | | 34,000 | May. | 1899 | .01 |
| 52 | Geyser-Marion, g | Utah. | 1,500,000 | 300,000 | 5 | | | | | | 96,000 | Sept. | 1898 | .02 |
| 53 | Gold Coin of Victor, g. | Colo. | 1,000,000 | 1,000,000 | 1 | | | | | | 240,000 | Sept. | 1899 | .01 |
| 54 | Golden Cycle, g | Colo. | 1,000,000 | 200,000 | 5 | | | | | | 228,500 | Sept. | 1899 | .05 |
| 55 | Gold King, g | Colo. | 1,000,000 | 1,000,000 | 1 | | | | | | 60,000 | July. | 1899 | .03 |
| 56 | Golden Eagle, g | Colo. | 500,000 | 500,000 | 1 | | | | | | 5,000 | July. | 1899 | .01 |
| 57 | Golden Reward, g | S. D. | 1,000,000 | 100,000 | 10 | | | | | | 155,000 | Feb. | 1898 | .15 |
| 58 | Grand Central, g | Utah. | 250,000 | 250,000 | 1 | | | | | | 666,250 | Sept. | 1899 | .24 |
| 59 | Grass Valley Expl | Cal | 100,000 | 30,000 | 2 | * | | | | | 22,500 | July. | 1899 | .25 |
| 60 | Gwin, g | Cal | 1,000,000 | 20,000 | 50 | 286,000 | Jan. | 1898 | | | 81,500 | Aug. | 1899 | .25 |
| 61 | Helena & Frisco, l. s | Idaho | 2,500,000 | 500,000 | 5 | * | | | | | 550,000 | June. | 1899 | .25 |
| 62 | Holy Terror, g | S. D. | 500,000 | 500 000 | 1 | | | | | | 142,000 | July. | 1899 | .01 |
| 63 | Homestake, g | S. D. | 21,000,000 | 210,000 | 100 | 200,000 | July. | 1878 | 1.00 | | 7,828,750 | Sept. | 1899 | .50 |
| 64 | Horn-Silver, g. s. c. sp. l. | Utah. | 10,000,000 | 400,000 | 25 | * | | | | | 5,370,000 | July. | 1899 | .05 |
| 65 | Iowa, g | Colo. | 1,000,000 | 1,000,000 | 1 | | | | | | 95,000 | June. | 1898 | .00½ |
| 66 | Iron Mountain, g. s. l. i. | Mont. | 5,000,000 | 500,000 | 10 | * | | | | | 507,500 | April. | 1898 | .02 |
| 67 | Isabella, g | Colo. | 2,250,000 | 2,250,000 | 1 | | | | | | 472,500 | Sept. | 1899 | .01 |
| 68 | Jack Pot, g | Colo. | 1,250,000 | 1,250,000 | 1 | | | | | | 75,000 | Sept. | 1899 | .04 |
| 69 | Jamison | Cal | 3,900,000 | 390,000 | 10 | 144,000 | Nov. | 1896 | .17 | | 50,700 | April. | 1899 | .10 |
| 70 | Lake Superior Iron | Mich. | 2,100,000 | 84,000 | 25 | | | | | | 736,000 | Feb | 1899 | 1.00 |
| 71 | Lillie, g | Colo. | 1,250,000 | 250,000 | 5 | | | | | | 279,110 | Sept. | 1899 | .05 |
| 72 | Mammoth, g. s. c | Utah. | 10,000,000 | 400,000 | 25 | * | | | | | 1,530,000 | Sept. | 1899 | .15 |
| 73 | Marion Con | Colo. | 5,000,000 | 500,000 | 10 | * | | | | | 300,000 | May. | 1899 | .01 |
| 74 | Matoa, g | Colo. | 1,000,000 | 1,000,000 | 1 | | | | | | 25,000 | Dec. | 1898 | .02½ |
| 75 | Mead, g | Cal | 200,000 | 200,000 | 1 | | | | | | 120,000 | June. | 1899 | .20 |
| 76 | Mercur, g | Utah. | 5,000,000 | 200,000 | 25 | * | | | | | 1,291,000 | July. | 1899 | 12½ |
| 77 | Minnesota Iron | Minn. | 16,500,000 | 165,000 | 100 | * | | | | | 4,735,000 | Oct. | 1898 | 1.50 |
| 78 | Missouri Zinc Fields, pf | Mo | 400,000 | 16,000 | 25 | | | | | | 13,320 | Sept. | 1899 | .17 |
| 79 | Modoc, g | Colo. | 500,000 | 500,000 | 1 | | | | | | 170,000 | Sept. | 1899 | .02 |
| 80 | Montana, Ltd., g. s | Mont. | 3,300,000 | 657,128 | 5 | * | | | | | 453,700 | April. | 1899 | .12 |
| 81 | Montana Ore Purchas'g | Mont. | 2,500,000 | 80,000 | 25 | * | | | | | 1,280,000 | Sept. | 1899 | 1.00 |
| 82 | Moon-Anchor Con,, g. | Colo. | 1,750,000 | 600,000 | 1 | | | | | | 261,000 | Nov. | 1898 | .07½ |
| 83 | Morning Star, g | Cal | 240,000 | 2,400 | 100 | 70,800 | Feb. | 1887 | .75 | | 744,650 | Sept. | 1899 | 3.00 |
| 84 | Mt. Rosa, g | Colo. | 1,000,000 | 1,000,000 | 1 | | | | | | 60,000 | Jan. | 1898 | .02 |
| 85 | Mt. Shasta | Cal | 100,000 | 20,000 | 5 | | | | | | 6,000 | May. | 1899 | .30 |
| 86 | Moulton | Mont. | 2,000,000 | 400,000 | 5 | | | | | | 480,000 | Feb. | 1899 | .05 |
| 87 | Mountain Copper | Cal | 6,250,000 | 250,000 | 25 | | | | | | 633,750 | Sept. | 1899 | 2.16 |
| 88 | Napa Cons., q | Cal | 700,000 | 100,000 | 7 | * | | | | | 1,040,000 | Oct. | 1899 | .30 |
| 89 | New Central Coal | Md | 1,000,000 | 50,000 | 20 | | | | | | 470,000 | April. | 1899 | .40 |
| 90 | New Idria, q | Cal | 500,000 | 100,000 | 5 | | | | | | 170,000 | Oct. | 1899 | .30 |
| 91 | New York Zinc | Mo | 700,000 | 28,000 | 25 | | | | | | 7,000 | Oct. | 1899 | .25 |
| 92 | N. Y. & Hon Rosario, s. g. | C. A. | 1,500,000 | 150,000 | 10 | * | | | | | 1,110,000 | Sept. | 1899 | .10 |
| 93 | North Star, g | Cal | 5,000,000 | 500,000 | 10 | 20,000 | June | 1885 | .02 | | 550,000 | April. | 1899 | .25 |
| 94 | Nugget | Colo. | 1,000,000 | 1,000,000 | 1 | | | | | | 20,000 | Aug. | 1898 | .00½ |
| 95 | Orphan Bell, g | Colo. | 1,000,000 | 1,000,000 | 1 | | | | | | 115,000 | Mar. | 1898 | .01 |
| 96 | Original Empire, g | Cal | 5,000,000 | 50,000 | 100 | 92,500 | Aug. | 1896 | 1.25 | | 500,000 | May. | 1899 | 1.00 |
| 97 | Osceola, c | Mich. | 2,500,000 | 93,000 | 25 | * | | | | | 2,801,500 | June. | 1899 | 3.00 |
| 98 | Parrot, c | Mont. | 2,300,000 | 230,000 | 10 | * | | | | | 2,690,898 | May. | 1899 | 1.50 |
| 99 | Pennsylvania Coal | Pa | 5,000,000 | 100,000 | 50 | | | | | | 14,050,000 | May. | 1899 | 8.00 |
| 100 | Pennsylvania Cons | Cal | 5,150,000 | 51,500 | 100 | 50,051 | Feb. | 1892 | .05 | | 105,575 | Sept. | 1899 | .20 |
| 101 | Petro, g | Utah. | 1,000,000 | 200,000 | 5 | | | | | | 5,000 | July. | 1899 | .02½ |
| 102 | Pioneer g | Cal | 1,000,000 | 100,000 | 10 | | | | | | 62,500 | Mar. | 1899 | .12½ |
| 103 | Portland, g | Colo. | 3,000,000 | 3,000,000 | 1 | * | | | | | 2,347,080 | Sept. | 1899 | .02 |
| 104 | Quicksilver, pref | Cal | 4,300,000 | 43,000 | 100 | | | | | | 1,845,411 | May. | 1899 | 2.50 |
| 105 | Quincy, c | Mich. | 2,500,000 | 100,000 | 25 | * | | | | | 11,070,000 | Aug. | 1899 | 5.00 |
| 106 | Raven, g | Colo. | 1,500,000 | 1,500,000 | 1 | | | | | | 29,500 | Sept. | 1899 | .00½ |
| 107 | Republic Cons., g | Wash | 3,500,000 | 3,150,000 | 1 | | | | | | 323,000 | Sept. | 1899 | .01 |
| 108 | Sacramento, g | Utah. | 5,000,000 | 1,000,000 | 5 | | | | | | 133,000 | Sept. | 1899 | .00½ |
| 109 | St. Joseph, l | Mo | 3,000,000 | 300,000 | 10 | * | | | | | 2,859,500 | June. | 1899 | .50 |
| 110 | Santa Rosalia, g. s | Cal | 100,000 | 100,000 | 1 | | | | | | 125,000 | Feb. | 1898 | 1.10 |
| 111 | Silver King, g. s. l | Utah. | 3,000,000 | 150,000 | 20 | 3,000 | Jan. | 1897 | .02 | | 2,250,000 | Sept. | 1899 | .25 |
| 112 | Small Hopes, s | Colo. | 5,000,000 | 250,000 | 20 | * | | | | | 3,325,000 | Feb. | 1899 | .10 |
| 113 | Smuggler, s. l. z | Colo. | 1,000,000 | 1,000,000 | 1 | | | | | | 1,185,000 | Sept. | 1899 | .01 |
| 114 | South Swansea, s. l. | Utah. | 150,000 | 150,000 | 1 | | | | | | 150,000 | Sept. | 1899 | .05 |
| 115 | Standard Cons., g. s | Cal | 2,000,000 | 200,000 | 10 | 99,888 | June. | 1890 | .50 | | 3,873,226 | Aug. | 1899 | .10 |
| 116 | Standard | Idaho | 500,000 | 500,000 | 1 | | | | | | 1,745,000 | April. | 1899 | .06 |
| 117 | Stratt n's Independ'ce | Colo. | 5,500,000 | 1,100,000 | 5 | * | | | | | 480,000 | Sept. | 1899 | .48 |
| 118 | Swansea, s. l | Utah. | 500,000 | 100,000 | 5 | | | | | | 241,000 | Oct. | 1899 | .05 |
| 119 | Tamarack, c | Mich. | 1,500,000 | 60,000 | 25 | | | | | | 5,910,000 | June. | 1899 | 4.00 |
| 120 | Tomboy, g | Colo. | 2,000,000 | 200,000 | 10 | | | | | | 730,000 | May. | 1899 | 4.00 |
| 121 | United, z. l., pref | Mo | 1,000,000 | 40,000 | 25 | * | | | | | 20,000 | July. | 1899 | .50 |
| 122 | Utah | Utah. | 1,000,000 | 100,000 | 10 | * | | | | | 179,000 | Jan. | 1899 | .02 |
| 123 | Victor, g | Colo. | 1,000,000 | 200,000 | 5 | * | | | | | 1,155,000 | Dec. | 1898 | .50 |
| 124 | Vindicator, Cons. g | Colo. | 1,500,000 | 1,015,000 | 1 | | | | | | 253,750 | July. | 1899 | .05 |
| 125 | War Eagle, Cons | B. C. | 2,000,000 | 1,750,000 | 1 | | | | | | 414,000 | Sept. | 1899 | .01½ |
| 126 | Wolverine, c | Mich. | 1,500,000 | 60,000 | 25 | 180,000 | Mar. | 1895 | 1.00 | | 270,000 | Oct. | 1899 | 1.50 |
| 127 | Yellow Aster, g | Cal | 1,000,000 | 100,000 | 10 | * | | | | | 253,789 | Sept. | 1899 | .10 |

## NON-DIVIDEND-PAYING MINES.

| | Name and Location of Company. | | Capital Stock. | Shares. No. | Shares. Par Val | Assessments. Total Levied. | Assessments. Date and Amount of Last. | | |
|---|---|---|---|---|---|---|---|---|---|
| 1 | Ada Cons., s. l | Utah. | $100,000 | 100,000 | $1 | $3,333 | Nov. | 1895 | .01½ |
| 2 | Alliance, g. s. l | Utah. | 150,000 | 150,000 | 1 | 200,000 | Dec. | 1895 | .10 |
| 3 | Allouez, c | Mich. | 2,500,000 | 100,000 | 25 | 1,520,937 | June. | 1894 | 1.00 |
| 4 | Alpha Cons., g. s | Nev. | 105,000 | 105,000 | 1 | 319,200 | Aug. | 1899 | .03 |
| 5 | Alta, s | Nev. | 216,000 | 108,000 | 2 | 3,675,710 | June. | 1899 | .05 |
| 6 | Alta | Utah. | 750,000 | 750,000 | 1 | 938 | Mar. | 1899 | .00½ |
| 7 | American Quartz, g | Cal | 1,000,000 | 100,000 | 10 | 1,000 | Feb. | 1897 | .01 |
| 8 | Anchor, g. s. l | Utah. | 1,500,000 | 150,000 | 10 | 560,000 | Aug. | 1893 | .20 |
| 9 | Andes, g | Nev. | 300,000 | 100,000 | 3 | 1,205,000 | June. | 1899 | .05 |
| 10 | Arnold, c | Mich. | 1,500,000 | 60,000 | 25 | 180,000 | Jan. | 1899 | 3.00 |
| 11 | Baliol, g | Cal | 1,000,000 | 100,000 | 10 | 55,000 | Mar. | 1898 | .30 |
| 12 | Belcher, s. g | Nev. | 312,000 | 104,000 | 3 | 3,535,600 | Aug. | 1899 | .10 |
| 13 | Belle Isle | Nev. | 10,000,000 | 100,000 | 100 | 240,271 | July. | 1896 | .10 |
| 14 | Benton Con. s | Nev. | 10,800,000 | 108,000 | 100 | 587,023 | June | 1897 | .25 |
| 15 | Best & Belcher, g. s. | Nev. | 302,400 | 100,800 | 3 | 2,609,803 | Aug. | 1899 | .10 |
| 16 | Bogan | Utah. | 1,250,000 | 125,000 | 10 | 26,875 | Dec. | 1897 | .01½ |
| 17 | Boston & Cp. Ck., g. | Colo. | 400,000 | 200,000 | 2 | 20,000 | Aug. | 1898 | .10 |
| 18 | Brunswick Cons., g. | Cal | 500,000 | 500,000 | 1 | 160,000 | July. | 1897 | .03 |
| 19 | Bullion, s. g | Nev. | 100,000 | 100,000 | 1 | 3,125,000 | May. | 1899 | .05 |
| 20 | Caledonia | Nev. | 300,000 | 300,000 | 3 | 3,210,000 | Nov. | 1897 | .10 |
| 21 | Centennial, c | Mich. | 2,500,000 | 100,000 | 25 | 460,000 | Mar. | 1898 | 3.00 |
| 22 | Central Eureka, g | Cal | 4,000,000 | 400,000 | 10 | 135,942 | Sept. | 1899 | .03 |
| 23 | Challenge Cons, s.g | Nev. | 150,000 | 50,000 | 3 | 438,000 | Aug. | 1899 | .10 |
| 24 | Chollar, g. s | Nev. | 336,000 | 112,000 | 3 | 2,076,600 | Aug. | 1899 | .15 |
| 25 | Confidence, g. s | Nev. | 74.880 | 24,960 | 3 | 545,118 | May. | 1899 | .20 |
| 26 | Con., Cal. & Va | Nev. | 540,000 | 216,000 | 2½ | 784,000 | Oct. | 1899 | .25 |
| 27 | Cons. Imperial, g. s. | Nev. | 500,000 | 500,000 | 1 | 2,251,000 | July. | 1899 | .01 |
| 28 | Con. New York | Nev. | 100,000 | 100,000 | 1 | 160,500 | Nov. | 1898 | .03 |
| 29 | Crown Point, g. s | Nev. | 300,000 | 100,000 | 3 | 2,980,000 | May. | 1899 | .10 |
| 30 | Dalton, s. l | Utah. | 2,500,000 | 500,000 | 5 | 58,750 | April. | 1899 | .01 |
| 31 | Dexter | Nev. | 1,000,000 | 200,000 | 5 | 38,000 | Apr. | 1898 | .15 |
| 32 | Diamond Con | Utah. | 1,000,000 | 200,000 | 5 | 8,000 | Mar. | 1899 | .04 |
| 33 | Eagle, g. s | Cal | 500,000 | 100,000 | 5 | 5,000 | Dec. | 1896 | .05 |
| 34 | Eagle, g. s | Ore. | 1,000,000 | 100,000 | 10 | 6,000 | Oct. | 1898 | .01½ |
| 35 | Emerald | Utah | 300,000 | 300,000 | 1 | 3,000 | Oct. | 1898 | .00⅓ |
| 36 | Eureka Cons., g. s. l | Nev. | 1,000,000 | 50,000 | 20 | 590,000 | Oct. | 1899 | .10 |
| 37 | Eureka Con. Drift, g. | Cal | 500,000 | 500,000 | 1 | 182,500 | Sept. | 1899 | .00½ |
| 38 | Exchequer, g. s | Nev. | 1,000,000 | 100,000 | 1 | 1,020,000 | Dec. | 1897 | .05 |
| 39 | Florence | Utah. | 1,000,000 | 200,000 | 5 | 1,000 | June. | 1899 | .00¼ |
| 40 | Four Aces | Utah. | 250,000 | 250,000 | 1 | 5,000 | Mar. | 1898 | .01 |
| 41 | Galena | Utah. | 1,000,000 | 100,000 | 10 | 10,000 | Oct. | 1898 | .10 |
| 42 | Geyser, s. l | Colo. | 5,000,000 | 500,000 | 10 | 1,225,000 | July. | 1899 | .10 |
| 43 | Gold Belt, g. s | Utah. | 500,000 | 500,000 | 1 | 3,012 | July. | 1896 | .00½ |
| 44 | Gold Coin | Colo. | 1,000,000 | 200,000 | 5 | 10,000 | Mar. | 1899 | .05 |
| 45 | Golden Eagle, g | Nev. | 400,000 | 400,000 | 1 | 4,000 | April. | 1899 | .01 |
| 46 | Golden Fleece Grav, g | Cal | 130,000 | 130 | 1000 | 56,360 | Mar. | 1897 | 2.00 |
| 47 | Gold & Silver Carb | Utah. | 500,000 | 500,000 | 1 | 2,500 | Mar. | 1899 | .00½ |
| 48 | Gould & Curry | Nev | 324,000 | 108,000 | 3 | 4,641,350 | Oct. | 1899 | .15 |
| 49 | Granite Hill, g. s | Cal | 500,000 | 100,000 | 5 | 124,000 | June. | 1899 | .03 |
| 50 | Great Eastern, g | Utah. | 1,500,000 | 300,000 | 5 | 6,500 | July. | 1899 | .00½ |
| 51 | Great Western, q | Cal | 5,000,000 | 50,000 | 100 | 75,520 | May. | 1899 | .15 |
| 52 | Hale & Norcross, g. s. | Nev. | 11,200,000 | 112,000 | 100 | 5,716,280 | May. | 1899 | .10 |
| 53 | Head Center Con., s. g | Ariz. | 5,000,000 | 200,000 | 25 | 25,125 | Mar. | 1899 | .20 |
| 54 | Horse Shoe Bar Cons. | Cal | 6,000,000 | 60,000 | 100 | 85,800 | Jan. | 1899 | .05 |
| 55 | Joe Bowers, Ext. gcls. | Utah. | 112,000 | 450,000 | ¼ | 9,000 | July. | 1899 | .01 |
| 56 | Julia Con | Nev. | 110,000 | 110,000 | 1 | 1,498,800 | Jan. | 1899 | .03 |
| 57 | Jupiter, g | Cal | 2,000,000 | 20,000 | 100 | 80,000 | Feb. | 1898 | .20 |
| 58 | Justice, g. s. c | Nev. | 210,000 | 105,000 | 2 | 3,662,500 | Aug. | 1899 | .10 |
| 59 | Kentuck | Utah. | 600,000 | 300,000 | 2 | 30,000 | Aug. | 1898 | .10 |
| 60 | Kentuck Cons., s | Nev. | 105,000 | 105,000 | 1 | 125,300 | June. | 1898 | .05 |
| 61 | Lacrosse, g | Colo. | 1,000,000 | 100,000 | 10 | * | | | |
| 62 | Little Pittsburg | Utah. | 2,000,000 | 400,000 | 5 | 21,000 | June. | 1899 | .00¾ |
| 63 | Lower Mammoth | Utah. | 150,000 | 150,000 | 1 | 22,500 | June. | 1899 | .05 |
| 64 | Lucky Bill | Utah. | 300,000 | 120,000 | 2.50 | 56,400 | June. | 1898 | .01½ |
| 65 | Marguerite, g | Cal | 500,000 | 50,000 | 10 | 85,000 | Aug. | 1899 | .10 |
| 66 | Marina Marsicano, g | Cal | 1,000,000 | 100,000 | 10 | 49,360 | June. | 1899 | .05 |
| 67 | May Day | Utah. | 100,000 | 400,000 | ¼ | 4,000 | Jan. | 1899 | .00½ |
| 68 | Mayday, g. s | Cal | 50,000 | 50,000 | 1 | 10,000 | July. | 1899 | .10 |
| 69 | Mayflower, g | Cal | 1,200,000 | 60,000 | 20 | 6,000 | Sept. | 1898 | .05 |
| 70 | Merced, g | Cal | 2,250,000 | 150,000 | 15 | 200,000 | July. | 1896 | 2.00 |
| 71 | Meteor, s. l | Utah. | 600,000 | 300,000 | 2 | 9,734 | Sept. | 1899 | .01 |
| 72 | Mexican, g. s | Nev. | 302,400 | 100,800 | 3 | 2,268,800 | June. | 1899 | .10 |
| 73 | Montreal | Utah. | 2,500,000 | 250,000 | 10 | 30,625 | April. | 1899 | .05 |
| 74 | Mt. Diablo s | Nev. | 5,000,000 | 50,000 | 100 | 150,000 | Dec. | 1898 | .10 |
| 75 | Morning Star, s | Nev. | 1,500,000 | 150,000 | 10 | 32,500 | Dec. | 1898 | .00½ |
| 76 | Nashville, g | Cal | 115,000 | 11,500 | 10 | 2,000 | Sept. | 1898 | .17 |
| 77 | North Banner, g. s | Cal | 1,000,000 | 100,000 | 10 | 21,794 | Oct. | 1896 | .02 |
| 78 | North Belle Isle, s | Nev. | 10,000,000 | 100,000 | 100 | 523,074 | July. | 1896 | .10 |
| 79 | No. Gould & Curry | Nev. | 100,000 | 100,000 | 1 | 375,000 | Dec. | 1898 | .10 |
| 80 | Northern Light, g | Utah. | 2,000,000 | 400,000 | 5 | 80,000 | July. | 1898 | .10 |
| 81 | Occidental Cons g s. | Nev. | 300,000 | 100,000 | 3 | 514,179 | Sept. | 1899 | .05 |
| 82 | Ophir, g. s | Nev. | 324,000 | 108,000 | 3 | 4,635,968 | Aug. | 1899 | .15 |
| 83 | Opohonga | Utah. | 200,000 | 100,000 | 2 | 1,500 | June. | 1898 | .01 |
| 84 | Oro Cache, g. s | S. D. | 1,250,000 | 250,000 | 5 | 6,250 | July. | 1893 | .00½ |
| 85 | Osceola, g | Cal | 10,000,000 | 100,000 | 100 | 10,924 | Sept. | 1898 | .01 |
| 86 | Overman, g. s | Nev. | 230,400 | 115,200 | 2 | 4,141,110 | Sept. | 1899 | .05 |
| 87 | Peer, s | Ariz. | 10,000,000 | 100,000 | 100 | 215,000 | July. | 1894 | .05 |
| 88 | Peerless, s | Nev. | 10,000,000 | 100,000 | 100 | 410,000 | July. | 1894 | .05 |
| 89 | Pine Hill, g | Cal | 1,000,000 | 100,000 | 10 | 30,000 | July. | 1897 | .05 |
| 90 | Potosi, g. s | Nev. | 336,000 | 112,000 | 3 | 2,185,200 | Sept. | 1899 | .15 |
| 91 | Powning | Cal | 750,000 | 75,000 | 10 | 2,800 | Aug. | 1899 | .01 |
| 92 | Red Mountain, s | Colo. | 300,000 | 60,000 | 5 | 22,500 | Mar. | 1891 | .12½ |
| 93 | Rescue, g | Nev. | 100,000 | 10,000 | 10 | 5,500 | Feb | 1899 | .05 |
| 94 | Reward, g | Cal | 64,000 | 64,000 | 1 | 63,680 | Nov. | 1898 | .02 |
| 95 | Ridge, c | Mich. | 500,000 | 20,000 | 25 | 239,939 | Feb. | 1897 | 1.00 |
| 96 | Savage, g. s | Nev. | 280,000 | 112,000 | 2½ | 7,321,000 | Sept. | 1899 | .10 |
| 97 | Scorpion, s | Nev. | 100,000 | 100,000 | 1 | 445,000 | Dec. | 1897 | .05 |
| 98 | Seg. Belcher & Mg s. | Nev. | 200,000 | 100,000 | 2 | 373,000 | June. | 1899 | .05 |
| 99 | Sevier, g. s | Utah. | 1,250,000 | 250,000 | 5 | 50,000 | April. | 1897 | .04 |
| 100 | Shower Con | Utah. | 2,000,000 | 400,000 | 5 | 8,000 | Aug. | 1899 | .02 |
| 101 | Sierra-Nevada, g. s | Nev. | 300,000 | 100,000 | 3 | 6,721,910 | Aug. | 1899 | .15 |
| 102 | Silver Hill, s | Nev. | 108,000 | 108,000 | 1 | 2,220,200 | May | 1898 | .05 |
| 103 | Silver King, s | Ariz. | 10,000,000 | 100,000 | 100 | 490,000 | Aug. | 1899 | .25 |
| 104 | Silver Queen, c | Ariz. | 5,000,000 | 200,000 | 25 | * | | | |
| 105 | Silver State, g | Colo. | 700,000 | 700,000 | 1 | * | | | |
| 106 | Silver State, s. g. l | Utah. | 100,000 | 100,000 | 1 | 1,000 | Sept. | 1897 | .00½ |
| 107 | Siskiyou Con., s | Cal | 2,000,000 | 200,000 | 10 | 46,000 | April. | 1898 | .01 |
| 108 | Snow Flake | Utah. | 500,000 | 100,000 | 5 | 51,000 | July. | 1899 | .02 |
| 109 | South Fork Con | Utah. | 50,000 | 50,000 | 1 | 5,000 | Mar. | 1898 | .01 |
| 110 | South Side | Mich. | 1,000,000 | 40,000 | 25 | 4,000 | Jan. | 1899 | .10 |
| 111 | Star, g. s | Utah. | 1,000,000 | 200,000 | 5 | 7,000 | Feb. | 1899 | .03 |
| 112 | Success | Utah. | 30,000 | 300,000 | 0.10 | 9,750 | Oct. | 1899 | .01 |
| 113 | Sunbeam Cons | Utah. | 250,000 | 250,000 | 1 | 73,125 | Oct. | 1899 | .10 |
| 114 | Tecumseh, c | Mich. | 1,000,000 | 40,000 | 25 | 40,000 | July. | 1897 | 1.00 |
| 115 | Temonj, g | Colo. | 1,000,000 | 1,000,000 | 1 | | | | |
| 116 | Tetro | Utah. | 300,000 | 300,000 | 1 | 30,000 | Sept. | 1899 | .01 |
| 117 | Triumph | Utah. | 1,000,000 | 100,000 | 10 | 1,000 | April. | 1899 | .01 |
| 118 | Union Cons., g. s | Nev. | 250,000 | 100,000 | 2½ | 2,648,000 | Sept. | 1899 | .15 |
| 119 | Utah Cons., s | Nev. | 100,000 | 100,000 | 1 | 485,000 | Sept. | 1899 | .05 |
| 120 | Valeo | Utah. | 200,000 | 200,000 | 1 | 10,000 | May. | 1899 | .05 |
| 121 | Victory, g. s | S. D. | 1,250,000 | 250,000 | 5 | 2,625 | Nov. | 1899 | .00½ |
| 122 | Watt Blue Gravel, g | Cal | 1,100,000 | 100,000 | 10 | 58,000 | May. | 1899 | .03 |
| 123 | Work, g | Colo. | 1,250,000 | 1,250,000 | 1 | | | | |
| 124 | Yankee Girl | Utah. | 250,000 | 250,000 | 1 | 5,000 | April. | 1899 | .02 |
| 125 | Yellow Jacket, g. s | Nev. | 360,000 | 120,000 | 3 | 5,305,000 | April. | 1899 | .15 |
| 126 | Yellow Jacket | Utah. | 300,000 | 300,000 | 1 | 1,500 | Dec. | 1897 | .00⅓ |

G., Gold. S., Silver. L., Lead. C., Copper. B., Borax. * Non-assessable. This table is corrected up to Sept. 25 Correspondents are requested to forward changes or additions.

# CHEMICALS, MINERALS, RARE ELEMENTS, ETC.—CURRENT PRICES.

| | Cust. Meas. | Price. |
|---|---|---|
| **Abrasives—** | | |
| Carborundum, f.o.b. | | |
| Niagara Falls grains.. | lb. | $0.10 |
| Powd., F. FF. FFF.. | " | .08 |
| Minute No. 1..... | " | .15 |
| No. 15..... | " | 1.00 |
| Corundum, N. C..... | " | .07@.10 |
| Chester..... | " | .04½@.05 |
| Emery, Turkish flour... | " | .03 |
| Grains..... | " | .05 |
| Naxos flour..... | " | .03 |
| Grains..... | " | .05 |
| Chester flour..... | " | .03 |
| Grains..... | " | .05 |
| Peekskill flour..... | " | .01¾ |
| Grains..... | " | .02½ |
| Crude, Kuluk, best...lg. ton | | 18.50 |
| Levant, " | " | 22.00 |
| Naxos (Greek) best | " | 32.00 |
| Pumice Stone, Am..powd. | lb. | .01@.02 |
| Italian, powdered.... | " | .01¼ |
| Lump, per quality.... | " | .04@.40 |
| Rottenstone, ground.... | " | .02½@.03 |
| Lump, per quality.... | " | .05@.14 |
| Rouge..... | " | .17@.30 |
| Tripoli, prepared.....sh. ton. | | 20.00 |
| **Acids**—Acetic, 30% pure.100 lbs. | | 3.20 |
| 30% ch. pure..... | " | 6.90 |
| 80% pure..... | " | 9.50 |
| Benzoic, English..... | oz. | .09@.09½ |
| German..... | lb. | .46@.47 |
| Boracic, pure cryst..... | " | .11 |
| Powdered ..... | | .11½@.11¾ |
| Carbolic, cryst. in drums | " | .16 |
| Carbonic, liquid..... | " | .15 |
| Chromic, crude..... | " | .23 |
| Chem. pure..... | " | .50 |
| Absol. ch. pure..... | " | 1.75 |
| Hydrochloric, ch. pure. | " | .08 |
| Hydrofluoric, 30%..... | " | .03@.04½ |
| 48%..... | " | .05@.06 |
| Best..... | | .25 |
| Nitric, chem. pure..... | " | .10 |
| Sulphuric, 98%..... | " | .02 |
| Chem. pure..... | " | .07 |
| Tartaric, cryst..... | " | .32 |
| Powder..... | " | .32½ |
| **Alcohol**—Grain..... | gal. | 2.44@2.46 |
| Refined wood, 95@97% | " | .75@.80 |
| Purified..... | " | 1.20@1.50 |
| **Alum**—Lump.....100 lbs. | | 1.75 |
| Ground... ..... | " | 1.85 |
| Chrome, com'l..... .... | " | 3.50 |
| **Aluminum—** | | |
| Nitrate..... ..... | lb. | 1.50 |
| Oxide, com'l, common.. | " | .06½ |
| Best..... | " | .20 |
| Pure..... | " | .80 |
| Hydrated..... | " | .05 |
| Sulphate, pure..... | " | .02 |
| Com'l ..... | " | 1.25 |
| **Ammonia**—Aqua, 16° .. | " | .04 |
| 18°..... | " | .04½@.05½ |
| 20°..... | " | .05@.06 |
| 26°..... | " | .07@.08 |
| **Ammonium**—Bromide, p'r | " | .52@.53 |
| Carbonate lumps..... | " | .08@.08¼ |
| Powdered..... | " | .09@.09¼ |
| Muriate, gran., white... | " | .06½ |
| Gran. ch. p..... | " | .09¼ |
| Lump..... | " | .08½ |
| Gray..... | " | .06 |
| Nitrate, white, pure (99%) | " | .10½ |
| Phosphate, com'l..... | " | .12@.15 |
| Chem. pure.. ..... | " | .60 |
| **Antimony**—Glass ..... | " | .30@.40 |
| Needle, lump..... | " | .05½@.06 |
| Powdered, ordinary.. | " | .05¾ |
| Best..... | " | .08½ |
| Oxide, com'l white, 95%. | " | .09¼ |
| Com'l white, 99%..... | " | .10½ |
| Com'l gray ..... | " | .07@.08 |
| Sulphuret, com'l..... | " | .16 |
| **Arsenic**—White..... | " | .04½@.05 |
| Red ..... | " | .07¾@.08½ |
| **Asphaltum—** | | |
| Ventura, Cal.....sh. ton | | 32.00 |
| Cuban, refined..... | lb. | .04½ |
| Common..... | " | .02 |
| Egyptian, refined..... | " | .06½ |
| Trinidad, refined..... | " | .01½ |
| San Valentino .....lg. ton | | 16.00 |
| Gilsonite, Utah, ordinary | lb. | .03¾ |
| Select..... | " | .03¾ |
| **Barium**—Carbonate, Lump, 80@90% ....sh. ton | | 25.00@27.50 |
| 92@98%..... | " | 26.00@29.00 |
| Powdered, 80@90%... | lb. | .01¾@.02 |
| Chloride, com'l..... | " | .02¼ |
| Chem. pure cryst .... | " | .05 |
| Nitrate, powdered ..... | " | .06 |
| Oxide, com'l, hyd.cryst | " | .18@.22 |
| Hydrated, pure cryst. | " | .25 |
| Pure, powd..... | " | .27 |
| Sulphate..... | " | .01 |
| **Barytes**—Crude, No. 1..sh. ton | | 9.00@10.00 |
| No. 2..... | " | 8.00@8.25 |
| No. 3..... | " | 7.75@8.00 |
| Prime White..... | " | 18.00@20.00 |
| Floated..... | " | 19.00@20.00 |
| **Bauxite**—Ga. & Ala. f.o.b. cars, first grade.....lg. ton | | 5.00 |
| Second grade..... | " | 3.50 |
| **Benzole**—90%..... | gal. | 1.00@1.10 |
| **Bismuth**—Oxide, hydr.. | lb | 2.25@2.56 |
| Submitrate cryst..... | oz. | .09@.10 |
| **Bitumen**, "B"..... | lb. | .03½ |
| "A" ..... | " | .05 |
| **Bone Ash**..... ..... | " | 02¾@.03½ |
| **Borax**—Cryst. and pow'd | " | .07@.07½ |
| Calcined ..... | " | .22 |
| **Bromine**—Bulk..... | " | .45 |
| **Cadmium**—Metallic..... | " | 1.50@2.00 |
| Sulphide..... | " | 2.00@3.00 |
| Sulphate..... | " | 2.00@2.50 |
| Carbide, in ton lots, f. o. b. Niagara Falls, N.Y. | lb. | .03@.04 |

| | Cust. Meas. | Price. |
|---|---|---|
| **Calcium—** | | |
| Acetate, pure white.....100 lbs. | | $1.00 |
| Gray..... | " | 1.25@1.30 |
| Brown ..... | " | .80@.85 |
| Carbonate, ppt..... | lb. | .05 |
| Chloride, com'l.....100 lbs. | | .90@1.00 |
| Best ..... | " | 1.90@2.00 |
| Sulphite..... | lb. | .05 |
| **Cement—** | | |
| Portland, Am., 400 lbs.. | bbl. | 1.50@2.00 |
| Foreign..... | " | 1.75@2.50 |
| "Rosendale," 300 lbs... | " | .90 |
| Sand cement, 400 lbs... | " | 1.55@1.95 |
| Slag cement, imported. | " | 1.65 |
| **Ceresine—** | | |
| Orange and Yellow..... | lb. | .10½ |
| White..... | " | .12½ |
| **Chalk**—Lump, bulk.....sh. ton | | 2.15@2.25 |
| Precipitated..... | lb. | .04@.04½ |
| French..... .....100 lbs. | | .30@.35 |
| **Chlorine**—Liquid..... | lb. | .30 |
| Water..... | " | .15 |
| **Chrome Ore—** | | |
| (50% chrome) ex ship....lg. ton | | 22.00 |
| Sand..... ..... | " | 35.00 |
| **Clay, China**—Am. com., ex-dock, N. Y.....sh. ton | | 7.50 |
| Am. best, ex-dock, N. Y. | " | 8.50 |
| English, common.....lg. ton | | 11.00 |
| Best grade..... | " | 17.00 |
| Fire, ground, f.o.b. Jersey City, N. J.... ...sh. ton | | 4.00@5.00 |
| Slip Clay ..... | | 6.00 |
| **Cobalt**—Carbonate..... | lb. | 1.50 |
| Nitrate ..... ... | " | 1.30 |
| Oxide—Black..... | " | 1.75 |
| Gray..... | " | 2.25 |
| Smalt, blue ordinary | " | .20 |
| Best..... | " | .30 |
| Chem. pure..... | " | 5.00 |
| **Copperas**.....100 lbs. | | .60@.62½ |
| **Copper**—Carbonate..... | lb. | .18@.20 |
| Chloride..... | " | .25 |
| Nitrate, crystals..... | " | .35 |
| Oxide..... | " | .19@.20 |
| **Cream of Tarter**—crys. | " | .23½ |
| Granulated..... | " | .24 |
| Powdered ..... | " | .24 |
| **Cryolite**..... | " | .06½ |
| **Explosives—** | | |
| Blasting powder, A..... | " | .10¾ |
| Blasting powder, B..... | " | .05@.05½ |
| "Rackarock," A..... | " | .25 |
| "Rackarock," B..... | " | .18 |
| Judson R.R. powder.... | " | .10 |
| Dynamite, (40% nitroglycerine)..... | " | .15 |
| (50% nitro-glycerine).. | " | .17 |
| (60% nitro-glycerine).. | " | .19 |
| (75% nitro-glycerine).. | " | .23 |
| Glycerine for nitro (32 2-10° Be.)..... | " | .11@.11¼ |
| Nitro-Benzole..... | " | .14 |
| **Feldspar**—Ground.....sh. ton | | 6.50@7.75 |
| **Flint**—(See Silica). | | |
| **Fluorspar**—Am. lump.. | " | 8.00 |
| Gravel..... | " | 7.00 |
| Crushed..... | " | 6.50 |
| Ground..... | " | 15.00 |
| Foreign, lump..... | " | 8.00@12.00 |
| Ground..... | " | 11.50@14.00 |
| **Fuller's Earth**—Lump.100 lbs. | | .75 |
| Powdered..... | " | .85 |
| **Ganister Rock**.....lg. ton. | | 6.50 |
| **Graphite**—(See Plumbago). | | |
| **Gypsum—** | | |
| Am. gr'd (terra alba)...sh. ton | | 8.00 |
| Fertilizer..... | " | 7.00 |
| Rock..... .....lg. ton | | 4.00 |
| English and French..... | " | 14.00@16.00 |
| **Infusorial Earth**—Ground. | | |
| American, best..... | " | 20.00 |
| French..... | " | 37.50 |
| German..... | " | 40.00 |
| **Iodine**—Crude.....100 lbs. | | 2.45 |
| Resublimed..... | " | 2.85 |
| **Iron**—Chromate..... | lb. | .03@.10 |
| Muriate ..... | " | .05 |
| Nitrate, com'l..... | " | .01¼@.01¾ |
| True..... | " | .04 |
| Oxide, pure copperas col | " | .05@.10 |
| Purple-brown..... | " | .02 |
| Venetian red..... | " | .01@.01½ |
| Scale ..... | " | .01@.03 |
| **Kaolin**—(See Clay, China). | | |
| **Kryolith**—(See Cryolite.) | | |
| **Lead**—Acetate, white ... | lb. | .07¼ |
| Com'l, broken..... | " | .06⅝ |
| White, gran..... | " | .08⅞ |
| Nitrate, com'l..... | " | .06½@.06¾ |
| Chem. pure..... | " | .35 |
| **Lime**—Bldg., ab. 250 lbs | bbl. | .90 |
| Finishing..... | " | 1.00 |
| **Magnesite—** | | |
| Crude, lump (95%) Greece lg. ton | | 7.25 |
| German (85%)..... | " | 12.00 |
| Calcined, 600° C. (Greece) | " | 15.00 |
| 1,000° C. (Greece) | " | 18.50 |
| 3,000° F. (Greece).. | " | 21.00 |
| Domestic, soft.....sh. ton | | 12.00@15.00 |
| Bricks, all magnesite.. | M. | 185 00 |
| Magnesite and chrome. | " | 226.00 |
| **Magnesium—** | | |
| Metallic, ingots (Ger).. | kg. | 5.95@6.90 |
| Powdered (Ger.)..... | " | 6.19 |
| Ribbon or wire (Ger.). | " | 10.00 |
| Carbonate, light, fine pd | lb. | .03¾@.04 |
| Blocks..... | " | .06@.09 |
| Chloride, com'l..... .... | " | .01¾ |
| Fused..... | " | .20 |
| Nitrate..... | " | .60 |
| **Manganese**—Crude, pow'd 70@75% binoxide.... | " | .01¼@.01½ |
| 75@85% binoxide.... | " | .01½@.02½ |
| 85@90% binoxide.... | " | .02½@.03¼ |
| 90@95% binoxide.... | " | .02¾@.05¼ |
| Carbonate..... | " | .16@.20 |

| | Cust. Meas. | Price. |
|---|---|---|
| **Manganese—** | | |
| Chloride..... | lb. | .04 |
| Ore, 50%..... | unit | .22@.22½ |
| **Marble**—Flour .....sh. ton | | 5.50@8.00 |
| **Mercury**—Bichloride.... | lb. | .59@.60 |
| Bisulphate..... | " | .41 |
| **Mica**—N. Y. gr'nd, coarse | " | .04@.05 |
| Fine..... | " | .06@.08 |
| Sheets, 1½x3 in..... | " | .60 |
| 6x10 in..... | " | 13.00 |
| **Mineral Wool—** | | |
| Slag, ordinary.....100 lbs. | | .90 |
| Selected..... | " | 1.40 |
| Extra..... | " | 3.00 |
| Rock, ordinary.....sh. ton | | 32.00 |
| Selected.....100 lbs. | | 2.50 |
| Extra ..... | " | 5.00 |
| **Monazite**—92%.....sh. ton | | 140.00 |
| **Nickel**—Oxide, bl'k No. 1 | lb. | 1.00 |
| Black No. 2..... | " | .60 |
| Green, No. 1..... | " | 1.00 |
| No. 2..... | " | .60 |
| **Oils—** | | |
| Black, reduced 29 gr.: | | |
| 25@30 cold test..... | gal. | .10½@.11 |
| 15. cold test..... | " | .11½@.12 |
| Zero..... | " | .12½@.13½ |
| Summer..... | " | .10@.10½ |
| Cylinder, dark steam ref | " | .09½@.14½ |
| Dark filtered..... | " | .12½@.17½ |
| Light filtered..... | " | .14½@.17 |
| Extra cold test..... | " | .22½@.26½ |
| Gasolene, 86°@90°..... | " | .16@.18 |
| Neutral filtered, lemon, 33@34 gr..... | " | .13@.18½ |
| White, 33@34 gr..... | " | .21@.23 |
| Wool grade, 32 gr.... | " | .11@.14 |
| Naphtha, 62°..... | " | .13¾ |
| Deodorized, 76°..... | " | .13¾ |
| Paraffine, high viscosity | " | .22½@.27½ |
| 23½@24 gr ..... | " | .10¾@.11 |
| 25 gr..... | " | .09¾@.10 |
| 28 gr..... | " | .09@.09¼ |
| 30@32 gr..... | " | .08¾@.09 |
| Red No. 1..... | " | .10¼@.10¾ |
| No. 2..... | " | .09¾@.10¼ |
| Linseed, domestic raw.. | " | .44 |
| Boiled ..... | " | .46 |
| Calcutta, raw..... | " | .60 |
| Graphite, lubricating, Am. dry..... | lb. | .10 |
| In oil..... | " | .12 |
| Axle grease..... | " | .08½@.10 |
| Wood grease..... | " | .05@.06 |
| **Ozokerite**—Foreign .... | " | .06@.08 |
| **Paints and Colors—** | | |
| Benzine, Sumatra..... | " | .35@.40 |
| Marbled..... | " | .27@.28 |
| Chrome green, common | " | .05@.06 |
| Extra..... | " | .12@.15 |
| Chem. pure..... | " | .20@.25 |
| Super..... | " | .10@.12 |
| Yellow, common..... | " | .10 |
| Best..... | " | .25 |
| Silica Graphite, thick.. | " | .12 |
| Thinned..... | gal. | 1.15 |
| Lampblack—Com'l..... | lb. | .03@.05 |
| Refined..... | " | .08@.10 |
| Calcined..... | " | .12@.20 |
| Fine spirit..... | " | .20@.35 |
| Litharge. Am. powd.. | " | .05½@.05¾ |
| English flake..... | " | .07¾@.08 |
| Metallic, brown.....sh. ton | | 16.00@20.00 |
| Red..... | " | 16.00@20.00 |
| Ocher, Am. common.... | " | 9.25@10.00 |
| Best..... | " | 21.25@25.00 |
| Dutch, washed..... | lb. | .04¾@.05 |
| French, washed..... | " | .01¼@.02½ |
| Orange mineral, Am... | " | .07¾@.08 |
| Foreign, as to make.. | " | .09@.10¾ |
| Paris green, pure..... | " | .11½@.12 |
| Red lead, American..... | " | .05¼@.05¾ |
| Foreign..... | " | .07½@.08 |
| Shellac, "D. C."..... | " | .26 |
| Native..... | " | 16 |
| Turpentine, spirits..... | gal. | .44½@.45 |
| Ultramarine, best..... | lb. | .25 |
| Vermilion, Amer. lead.. | " | .14@.16 |
| Quicksilver, bulk... | " | .64 |
| Chinese ..... | " | .80@.90 |
| English, imported.... | " | .70 |
| White lead, Am., dry... | " | .05@.05½ |
| In oil..... | " | .05½@.06½ |
| English, in oil..... | " | .07½@.08¼ |
| Whiting, common.....100 lbs. | | 1.45 |
| Gilders..... | " | .50 |
| Zinc white, Am..ex.dry | lb. | .04½@.05 |
| American, red seal... | " | .07½@.08 |
| Green seal..... | " | .08@.08½ |
| Foreign, red seal, dry | " | .07⅞@.08⅝ |
| Green seal, dry..... | " | .08⅜@.09⅞ |
| Foreign, red seal, in oil | " | .10⅛@.11¼ |
| Green seal, in oil... | " | .11¼@.12½ |
| **Plumbago—** | | |
| German, lump.....100 lbs. | | 1.50@2.00 |
| Pulverized..... | " | 2.25 |
| Ceylon, pulv. common. | lb | .03⅞ |
| Best..... | " | .05@.08 |
| Italian, pulv..... | " | .01¼ |
| **Potash**—Caustic, ord... | " | .05@.05½ |
| Elect. (90%)..... | " | .05¾@.07 |
| **Potassium—** | | |
| Metallic, in balls (Ger).. | kg. | 17.85 |
| Bicarbonate cryst..... | lb. | .08½ |
| Powdered or gran.... | " | .12 |
| Bichromate..... | " | .09½ |
| Bromide, ..... | " | .46@.47 |
| Carbonate..... | " | .03¾@.03¾ |
| Chromate ..... | " | .35 |
| Cyanide (98@99%)..... | " | .28@.29 |
| Ferro-cyanide ..... | " | .19@.20 |
| Iodide ..... | " | 2.15 |
| Permanganate, pure cr. | " | .14@.15 |
| Silicate..... | " | .06 |
| Prussiate, yellow. ..... | " | .19@.20 |
| Red..... | " | .38 |
| Sulphide, com'l..... | lb. | .10 |

| | Cust. Meas. | Price. |
|---|---|---|
| **Quartz**—(See Silica). | | |
| **Rosin**—Common..... | bbl. | $1.25 |
| Best..... | " | 3.50 |
| **Salt**—N.Y. com. fine abt. 380 lbs..... | bbl. | .70 |
| N. Y. agricultural.....sh. ton | | 1.50 |
| N. Y. coarse..... | " | 2.30 |
| N. Y. dairy and table... | " | 2.90 |
| **Saltpeter**—Crude.....100 lbs. | | 3.50 |
| Refined..... | " | 4.25@5.50 |
| **Samarskite**..... | lb. | 1.00 |
| **Silica—** | | |
| Ground quartz, ord....sh. ton | | 6.00@8.00 |
| Best..... | " | 12.00 |
| Lump quartz..... | " | 2.50@4.00 |
| Fire bricks (Blue Welch) M. | | 35.00 |
| **Silver**—Chloride..... | oz. | .65 |
| Nitrate. ..... | " | .41 |
| Oxide..... | " | .85@1.10 |
| **Sodium**—Metallic..... | lb. | .07¾ |
| Acetate, com'l..... | " | .03½ |
| Bichromate..... | " | .07¾ |
| Bisulphite, com'l..... | " | .01⅝ |
| Bromide ,..... | " | .49@.50 |
| Chlorate, com'l..... | " | .09¾@.10 |
| Hyposulphite.....100 lbs. | | 1.60@1.70 |
| Nitrite..... | lb. | .07½@.07¾ |
| Peroxide..... | " | .45 |
| Phosphate..... | " | .03 |
| Triphosphate ..... | " | .04 |
| Silicate, conc..... | " | .01@.01½ |
| Sulphate, gran., puri'd. | " | .03 |
| Sulphide.....100 lbs. | | 1.75 |
| Sulphite..... | lb. | .02½ |
| Tungstate, com'l ..... | " | .35 |
| Pure..... | " | .50 |
| **Strontium**—Nitrate .... | " | .07¾ |
| **Sulphur**—Roll.....100 lbs. | | 2.00 |
| Flour..... | " | 2.20 |
| Flowers, sublimed... | " | 2.37½ |
| **Talc**—N. C No. 1.....sh. ton | | 15.00@15.50 |
| No. 2..... | " | 10.00@12.00 |
| N. Y., Fibrous..... | " | 8.00@9.00 |
| French, .....100 lbs. | | 1.10@1.25 |
| Italian, ..... | " | 1.50@2.00 |
| **Tar**—Coal..... | bbl. | 3.00 |
| **Tin**—Chloride ..... | lb. | .18@.15 |
| Crystals..... | " | .24@.26 |
| Muriate..... ..... | " | .08 |
| Oxide, white, ch. pure.. | " | .48@.50 |
| **Uranium**—Oxide..... | " | 1.80@2.00 |
| **Zinc**—Metallic, ch. pure.. | " | .09@.10 |
| Carbonate..... | " | .15 |
| Chloride ..... | " | .06@.08 |
| Dust..... | " | .07@.07¼ |
| Sulphate..... ..... | " | .02½ |

## THE RARE ELEMENTS.

Prices given are at makers' works in Germany, unless otherwise noted.

| | Cust. Meas. | Price. |
|---|---|---|
| **Barium**—Amalgam ..... | grm. | $1.19 |
| Electrol..... | " | 5 71 |
| **Beryllium**—Powder..... | " | 5.95 |
| Crystals..... | " | 9.04 |
| Nitrate (N Y.)..... | oz. | 2.50 |
| **Boron**—Amorphous, pure | grm. | .19 |
| Crystals, pure..... | " | 1.43 |
| Nitrate (N. Y.)..... | lb. | 1.50 |
| **Calcium**—Electrol..... | " | 4.28 |
| **Cerium**—Fused.....grm. | | 2.02 |
| Nitrate (N. Y.)..... | lb. | 21.00 |
| **Chromium**—Fused ..... | kg. | 5.95 |
| Pure powder 95%..... | " | 1.79 |
| Chem. pure cryst..... | grm. | .21 |
| **Cobalt**—(98@99%)..... | kg. | 5.35@5.71 |
| Pure..... | | 30.94 |
| **Didymium**—Powder..... | grm. | 3.81 |
| Nitrate (N. Y.)..... | oz. | 4.00 |
| **Erbium** ..... | grm. | 3.09 |
| Nitrate (N. Y.)..... | oz. | 3.00 |
| **Gallium**..... | grain | 9.52 |
| **Germanium**—Powder.... | grm. | 33.32 |
| Fused..... | " | 35.70 |
| **Glucinum**—Powder..... | " | 5.95 |
| Crystals..... | " | 9.04 |
| Nitrate (N. Y.)..... | oz. | 2.50 |
| **Indium**..... | grm. | 4.05 |
| **Iridium**—..... | " | 2.38 |
| **Lanthanum**—Powder.... | " | 4.28 |
| Electrol, in balls ..... | " | 9.04 |
| Nitrate (N. Y.)..... | oz. | 3.50 |
| **Lithium**..... | grm. | 2.38 |
| Nitrate (N. Y.)..... | oz. | .60 |
| **Molybdenum**—Powder... | kg. | 2.62 |
| Fused, electrol 95%.....100 grms. | | 15.47 |
| **Niobium**..... | grm. | 3.81 |
| **Osmium**..... | " | .95 |
| **Palladium**..... | " | .95 |
| **Rhodium**..... | " | 2.87 |
| **Rubidium**—Pure..... | " | 4.76 |
| **Ruthenium**—Pure powd | " | 2.38 |
| **Selenium**—Com'l powder | kg | 30.94 |
| Sublimed powder..... | " | 40.46 |
| Sticks..... | " | 33.32 |
| **Silicium**—Amorphous...100 grms. | | 2.87 |
| Crystals, pure..... | | 5.95 |
| **Strontium**—Electrol .... | grm. | 6.19 |
| **Tantalum**—Pure..... | " | 3.57 |
| **Tellurium**—Ch. p.sticks.100 grms. | | 11.90 |
| Powder..... | " | 9.52 |
| **Thallium** ..... | kg. | 23.80 |
| **Thorium**—Metallic..... | grm. | 7.85 |
| Nitrate 49@50% (N. Y.).. | lb. | 5.00@5.50 |
| **Titanium** ..... | grm. | .71 |
| **Uranium**..... | " | .48 |
| Nitrate (N. Y.)..... | oz. | .25 |
| **Vanadium**—Fused..... | grm. | 1.19 |
| **Wolfram**—Fused.....100 grms. | | 22.80 |
| Powder, 95@98%..... | kg. | 1.90 |
| Chem. pure..... | " | 6.42 |
| **Yttrium**..... | grm. | 3.33 |
| Nitrate (N. Y.)..... | oz. | 4.00 |
| **Zirconium**—Com'l..... | kg. | 119.00 |
| Pure..... | grm. | .71 |
| Nitrate (N. Y.)..... | oz. | 1.00 |

NOTE.—These quotations are for wholesale lots in New York unless otherwise specified, and are generally subject to the usual trade discounts. This table is revised up to Sept. 19th. Readers of the ENGINEERING AND MINING JOURNAL are requested to report any corrections needed, or to suggest additions which they may consider advisable. See also Market Review of Chemicals and Minerals.